THE BUILDER

Incorporating ARCHITECTURE & THE BRITISH ARCHITECT

THE BUILDER HOUSE, CATHERINE STREET, ALDWYCH, LONDON, WC2

Telephones: Temple Bar 6251-2-3-4

Vol. CXCII January 25, 1957 No. 5939

NEWS SUMMARY

NEW HONORARY FELLOWS AND ASSOCIATES RIBA elected. p. 189

MANCHESTER has decided to install only gas or electrical heating in its new main buildings, as tending to purer air. p. 191

A MEMORANDUM on the Rent Bill has been offered for Government consideration by RICS. p. 193

THE 'PICTON STREET EXPERIMENT' in building with a nominated contractor 'has fully justified the LCC's hopes,' states a report made to the Council on Tuesday. p. 197

THE VIEW that architects as a profession were not quickly or easily going to agree on a uniform system of modular sizes was expressed by Mr. Cleeve Barr in London last week. Manufacturers, he said, would probably have to force the pace. p. 200

PRINCIPAL CONTENTS

ILLUSTRATIONS

	PAGE
UNIVERSITY OF RANGOON. By Raglan Squire and Partners	174
ARCHITECT'S HOUSE, BATH. By Beresford Smith	177
COMPREHENSIVE SCHOOL, TULSE HILL. By J. L. Martin	179
CONCRETE FLATS, TORYGLEN. By J. Austen Bent	185

ARTICLES

CORRESPONDENCE	176
CRAWLEY NEW TOWN: 2. By S. G. Joseph	183
LMBA: Minister attends Luncheon	188
INSTITUTE OF BUILDERS. Address by Dr. King	189
CENTRAL HEATING AND AIR POLLUTION: Manchester Decision	191
IN PARLIAMENT: The Coming Session	192
RENT BILL: RICS Memorandum	193
HOUSING CONSTRUCTION: LCC Experiments at Picton-street	197
PREFABRICATED BUILDINGS: Talk by A. W. Cleeve Barr	200
TOWN PLANNING DECISIONS	201
PRICES OF MATERIALS	202
RATES OF WAGES	205
PLANT AND MATERIALS	207
OVERSEAS BUILDING	208
SCOTTISH BUILDER	209
FUTURE CONSTRUCTION	210

METAL WINDOWS

IN recent years the sale of metal windows has increased substantially, but there is still real and effective competition from wood windows. The Monopolies Commission, which has been investigating conditions in the metal window industry, was unable to obtain figures which would make possible an accurate comparison of pre-war and post-war sales by quantity, but the Metal Windows Association (MWA) told the Commission that its members' production has been considerably higher than it was before the war. There have also been some newcomers to the industry so that there can be little doubt that sales are in fact higher than they were before the war. Nevertheless, wood windows are still used extensively. Most of the architects and builders who sent replies to the Commission's questionnaire use both standard metal and wood windows, and consider that there is effective competition between the two. The evidence received from local authorities also shows that wood is still competitive with steel in this respect.

This element of competition is probably the basic reason why the monopoly conditions prevailing in the industry have not been seriously detrimental to the public interest. In other words, competition may well have exercised a restraining influence on the price policy of the MWA. As reported in our issue of January 11, the Monopolies Commission found that the conditions to which the Monopolies and Restrictive Practices Act of 1948 applies prevail for two reasons. First, the members of the MWA supply approximately 90 per cent. by value of the standard metal windows for the UK market, and they operate a common price system and other arrangements which restrict competition. Second, one firm—Crittalls—supplies more than one-third of the windows for the home market.

The Commission concluded that the common price system, as now operated, was not detrimental to the public interest. They did, however, condemn the MWA's arrangements for reducing prices for particular inquiries when there is a likelihood of competition from either metal or wood windows; these arrangements affect about 7½ per cent. of the trade of MWA members, and the Commission consider that they should be brought to an end. The Commission saw no objection to quantity rebates as such, but recommend the MWA to consider the possibility of adjustments in their rebate table. Crittalls 'monopoly' position is not thought to operate against the public interest.

The Commission's task was to ascertain whether monopoly conditions existed in the industry and, if so, whether they operated against the public interest. Their formal conclusions and recommendations are, therefore, limited to these two matters. But the evidence collected by the Commission throws light on some other problems as well. There is a valuable symposium of views on the effects of standardisation and, in particular, on the value of British Standard 990. There seems to be general agreement that standardisation has proved advantageous, particularly where cost is the first consideration. BS 990 is evidently thought to meet a general need, but is also the subject of criticism. Rigidity of design, inadequate size, poor proportions, flimsy sections and difficulties in fitting and weatherproofing are mentioned as being among its disadvantages. One local authority considered that the BS did not meet their needs in respect of multi-storey housing. The evolution of the 'Z' range by some of the leading manufacturers is a clear indication of the limitations of the BS, and it is interesting to note that the 'Z' design meets with almost universal approval.

In the light of this general approval, it is rather surprising that the British Standards Institution should refer to 'uncertainty as to the acceptability of this range in preference to existing types.' There is perhaps need for further discussion on the scope and purpose of standardisation in relation to metal windows. The standard metal window is generally said to have the advantage of cheapness and ready availability. Architects, on the other hand, want a greater range of sizes and types; over-standardisation is regarded as a disadvantage because of the limitations which it imposes on building design, and

this view is shared by local authority as well as private architects. This is clearly one—though not the only—reason why wood continues to be competitive.

The Commission's report also shows that there is some divergence of opinion as to the contribution made by the MWA to research and technical development. Many people evidently think that the MWA has done valuable work, but there is a tendency to suggest that the Association has been restrictive and unenterprising in this respect. The truth would seem to be that the MWA has made a valuable contribution in the past, but that there is still plenty of scope for research and development.

A COURAGEOUS LEAD

AN important decision taken by Manchester Corporation means that in future central heating installations in all the Corporation's new buildings will be operated by town gas or electricity. The same principle will apply to the replacement of installations in existing Corporation buildings. This decision has nothing to do with the fuel oil situation; it was, in fact, taken in November, and the object is simply to minimise air pollution. As such it is to be commended as an important step, the first of its kind, towards implementing the recommendations of the Beaver report. The decision does not at present extend to housing. The objection to the use of solid fuels and fuel oil is the large quantities of sulphur dioxide that these fuels pour into the atmosphere when they are burnt.

Tables prepared for the Corporation by the City Architect, Mr. Leonard Howitt, show that Manchester is unlikely to lose as much as might be thought by its forward-looking gesture. Estimates for the installation of central heating in 14 major buildings proposed by the Corporation within the next few years show that the total estimated capital cost of installations using coke as fuel is £434,920 as compared with £394,820 for electricity. Annual running and maintenance costs are estimated at £47,960 for coke and £72,365 for electricity. The latter difference is not negligible, of course, but the increasing price of solid fuel to-day is tending (as is remarked on another page) to close the differential. The advent of nuclear energy may well enable the price of electricity to remain at least stable, even if it does not reduce it.

All this is to take no note of the object of Manchester's move—the improvement of health and the preservation of amenity. These are matters which every civilised municipality should foster, and Manchester's lead is one which every industrial city should follow. We particularly commend the Corporation on the logic which has led it to resist a call by the Ministry of Education to convert the central heating at ten schools from gas to oil-firing, since the latter method discharges into the air about twice as much sulphur dioxide as coal or coke, whereas gas is virtually free from sulphur dioxide. Events arising from Suez only reinforce an argument which, nevertheless, is based solely on amenity.

HOUSING EXPERIMENTS

THE London County Council is to be congratulated on the report presented by its housing committee on Tuesday last, for the report contains a highly informative account of constructional and contractual experiments made on the Picton-street housing scheme, Camberwell. The aim of these experiments is the provision of better value for public money in terms of quality and speed of construction in the housing programme, and is based upon the nomination of certain firms of contractors and the carrying out, through full collaboration between the Council's architects and the builders, of a series of experiments designed to that end.

The report (fully abstracted on page 197) outlines the results to date of the Picton-street (nominated contractor) experiment; the housing committee's intentions regarding a competitive tender contract on Picton-street lines, and three more nominated contractor experiments with the use of new techniques; a direct labour scheme designed as a practical test of whether traditional building techniques can be more economically used; and announces the committee's intention to increase the scope of the research and development work in the Architect's department.

Work on the original contract, begun just over two years ago, is not due for completion until next December, and the final cost may not therefore be known for another 18 months. Figures will be awaited eagerly for, other things being equal, it is for a cost reduction coupled with faster construction that we are looking. In so far as this initial scheme has been largely experimental, and changes of techniques have been made as thought desirable, it may show no surprising savings; time will tell. But what is in no doubt is that most useful data both on construction methods and on assembly have been gained, and some of the principal discoveries are outlined in the appendix to the report. An element of competition has now been introduced by the decision to engage in three more 'nominated contractor' schemes for flats using different constructional systems, and to introduce as a controlling check a fourth scheme which will employ traditional methods. The first interim report on this 'contest' should be of especial interest.

Notes of the Week

More Ministerial Appointments

ON Thursday of last week the Prime Minister announced the names of additional Ministers, following this up on Saturday by naming his junior Ministers. Mr. Hugh Molson returns to the Ministry of Works (of which he was Parliamentary Secretary from 1951-53) as Minister. He will find a good many changes in the Ministry, largely consequent on the removal of licensing which has taken the Department out of the political arena. This should leave the Minister free to deal with such things as building education and building and contractual organisation in which MoW, both by precept and by example, is exerting so considerable an influence. Mr. Harmar Nicholls, who will be remembered as an ardent backbench advocate of rationalised house planning in the later years of the last Socialist administration, joins the Ministry as Parliamentary Secretary. His predecessor, Mr. J. R. Bevins, transfers as Parliamentary Secretary to the Ministry of Housing and Local Government where he should find his knowledge of the building industry of use.

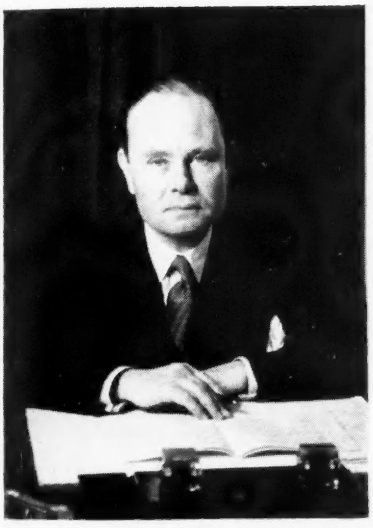
* * *

THE BOARD OF TRADE, in the reshuffle, loses at his own request the services of Mr. A. R. W. Low. Mr. Low's enthusiasm and hard work made a great impression and he had done much to encourage the building industry to extend its already notable programme of building overseas. We shall hope that his departure from the Government may be temporary only. Mr. Low is replaced as Minister of State, by Mr. Derek Walker-Smith, formerly Economic Secretary to the Treasury, who has presumably finished the important task he had been allotted, namely the steering through Parliament of the Monopolies Bill. Able, and well informed on matters affecting the building industry, Mr. Walker-Smith brings qualities to his new post which should be invaluable. Like Mr. Ernest Marples (who as Postmaster General rejoins the Government which he left a year ago after a successful period as Parliamentary Secretary to Mr. Macmillan when Housing Minister and a spell as Parliamentary Secretary to the Ministry of Pensions and National Insurance) he becomes a Privy Councillor.

Architecture as a Career

THIS NINE-PART DISPLAY, prepared by the RIBA as a travelling exhibit, is designed to inform young people about architecture as a profession. It manages to deal with, on one board containing a facsimile of the RIBA diploma and two pictures of the AA school of architecture, architectural education; on another, the nature of architect's work. Six panels are devoted to illustrations of various buildings under classifications such as schools, industrial work and so on. The first panel of the set is the introduction and it points out the architect's responsibility to the community. It would appear that this is an example of mis-

Mr. Henry Brooke, PC, MP, Minister of Housing and Local Government, and for Welsh Affairs



Mr. Hugh Molson, PC, MP, Minister of Works

placed emphasis; are six panels showing what an architect may do, and one telling how to go about becoming such a person, a right balance? There is no hint of the personal qualities that might be required when taking the courses so briefly mentioned on the last panel, no elaboration of the courses that can be taken. This exhibition, which is to be sent out on tour, lacks punch. The illustrations are too small; the information given negligible. The nine single-sided panels are 30 in. high and 24 in. wide. They are truly portable.

Architect's Housewarming

THE CONGENIAL HABIT of giving housewarmings continues among architects. Mr. Charles Pike's pleasant offices at 14, Lincoln's Inn Fields, received a large and well-assorted company of friends last week, present metaphorically to wet the head of the new firm. Mr. Pike, who (as a partner with Slater, Uren and Pike) designed the Kidbrooke school, first of the 'comprehensives,' is busy repeating the process elsewhere. A brave man, Mr. Pike admitted (which few architects will) that he had never visited the Soane museum next door, but now intended to do so. Other incidental intelligence gained was that there was a revival of interest in mural painting (our informant being Mr. John Spencer-Churchill, the painter) and that Mr. Harry Johnson (who retired in 1955 from editing 'Architecture and Building' and has been lost to sight ever since) is living down in Dorset and engaged in writing a book. If it contains reminiscences of a lively career largely spent among architects, it should make good reading.

New Churches Exhibition

THE Post-war Church Buildings Exhibition organised by the Central Council for the Care of Churches, which is now on tour, is proving more popular in different parts of the country. It has already visited Nottingham, Ipswich, Coventry, York, Cardiff, Liverpool and Manchester, and is booked to visit Sheffield, Derby, Newcastle upon Tyne, St. Albans, Canterbury, Rochester, Reading, Bristol, Plymouth and Norwich. It may also go to Scotland, but this is not yet definite.

In spite of the large number of towns which the exhibition is visiting, it may nevertheless be impossible for some who are interested to see it. For the benefit of these people, copies of the catalogue are obtainable from the Librarian, Central Council for the Care of Churches, Fulham Palace, London, SW6 (price 2s. each). The catalogue contains an introduction by Mr. George G. Pace, FRIBA, FSA, and includes particulars as to the architect, seating capacity and cost of each of the 57 church buildings included in the exhibition.

The New LMBA Team

FOLLOWING its annual meeting on Tuesday last and the election of its office-bearers for the year, the LMBA faces the new year with a strong and well-balanced team. In Mr. Kirby Laing, its new President, it has, to change the metaphor, big business at the helm, though anyone less like the tycoon of the cartoonist would be hard to imagine. Vice-captain is Stanley Farrow, a typical product of Mill Hill and the Rugby field, managing director of a substantial firm in North London. The Junior Vice-presidents are K. J. Pearce of Bromley, with a distinguished war record and a highly-valued decoration, and E. J. Cook, one of the younger directors of Richard Costain's. And in Laurence Holloway, the past-President once removed, now honorary Treasurer, the LMBA has experience and wise judgment to temper the enthusiasm of the team.

May we make a suggestion to the new President? This year the LMBA celebrates its 85th birthday. What more fitting celebration than an invitation to the public to see from the inside what building really means? Throughout its sites London builders have works at all stages of progress, from the hole in the ground to the gaunt steel structure with its gigantic crane silhouetted against the sunlit sky or, more mysterious still, against the moon-lit clouds. Why not open the building sites of London for a week or a fortnight in the summer, and invite the public (with proper safety precautions, of course) to come in during the dinner break and see what goes on? One firm, a member of the LMBA, has already done this with conspicuous success, and the LMBA itself, at the suggestion of one Lord Mayor, got its members to floodlight their sites in the City for the benefit of visitors going to the Lord Mayor's banquet. It could be done at no cost and with little trouble to the LMBA, but the building industry would stand higher in the public regard if it were done.

Water Heating 'Conference'

THE Domestic Electric Water Heater Section of the British Electrical and Allied Manufacturer's Association arranged a meeting, dignified by the title 'Conference,' at the Connaught Rooms on January 16. The speakers were J. F. Ford, a manufacturer representing BEAMA; Henry Clayton, Borough Engineer and Surveyor to Erith Borough Council; and Mrs. M. Wingham, mother of three, of South Woodford, Essex. The speeches were strictly non-technical and consisted principally of telling a captive audience of the wonders of heating water by electricity. It remained to Mrs. Wingham to state that she had tried solid fuel and, over 3 months, it had cost ten shillings more than electricity. Questioned on the sort of fuel used, she replied that it was the most expensive—anthracite. It does appear, however, that the price of solid fuel has risen so much of late that the cost differential has been almost if not entirely eliminated.

Insulation Films

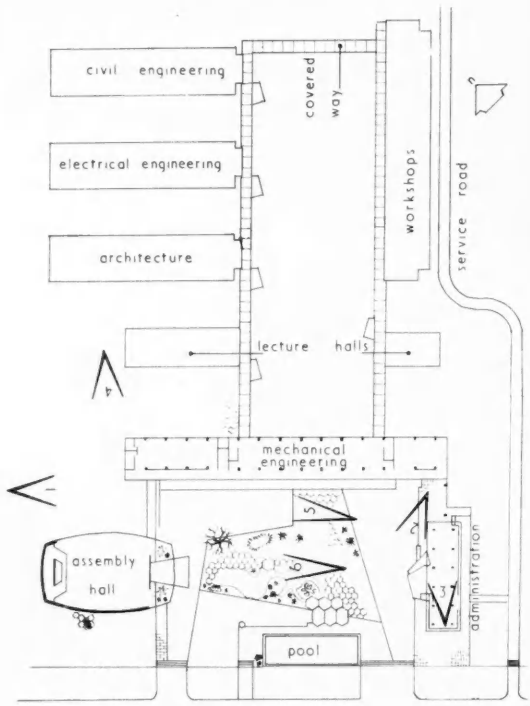
THE PICCADILLY HOTEL was used by the Building Board Manufacturers' Association of Great Britain Ltd., for a reception and film show on January 17. The principal guest was Mr. F. J. Errol, MP, then Parliamentary Secretary to the Board of Trade, who spoke in reply to the Chairman's introduction and welcome, with great wit and a ready humour. He pointed out that as the Government's list was not yet complete the occasion might be positively his last appearance. (In fact his forebodings were unfounded, he remains as Parliamentary Secretary.) The more serious aspects of his speech covered the values of insulation to the country in terms of conservation of energy; the news that £2m was being spent by the industry on new plant; the acceptance of automatic techniques or automation in the manufacture of building boards; and the international consultation that is to take place in Geneva. He complimented the Association on being alive, progressive and active. The films that were shown were very interesting: it is a pity that that showing the Bartrev continuous process machine was spoilt by continued reference to the trade name. Why is it that some firms can make a film and put their name on the title and the end credits only, others must say it every other word of the commentary?

UNIVERSITY, RANGOON

Architects : RAGLAN SQUIRE & Partners

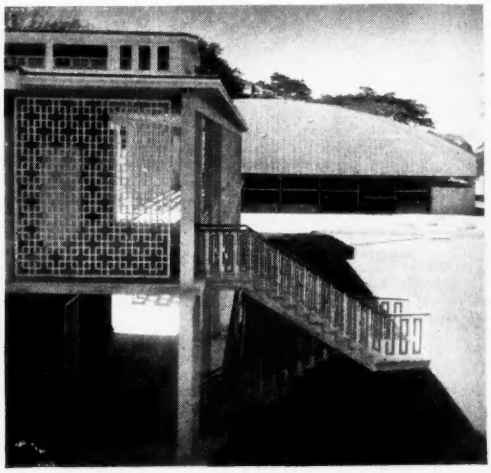
Consulting Engineers :
OVE ARUP & Partners

Builders : TAYLOR WOODROW Construction, Ltd., in association with United Burmese Engineers, Ltd.



LAYOUT PLAN, Viewpoints of the six illustrations are indicated by their numbers

1



2

3

1. *The administration and library building from the courtyard of the assembly hall, seen on the right*

2. *A staircase and grille of a lecture theatre in the foreground with the assembly hall beyond*

3. *The entrance canopy of the administration and library building*

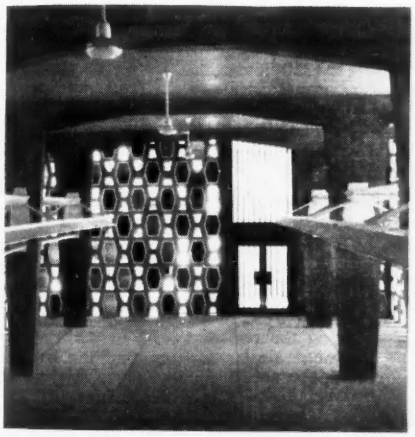
4. *The interior of the students' common room in the administration and library building. The precast units have coloured glass infilling*

5. *Detail of the precast concrete grille on the facade of the administration and library building superstructure*

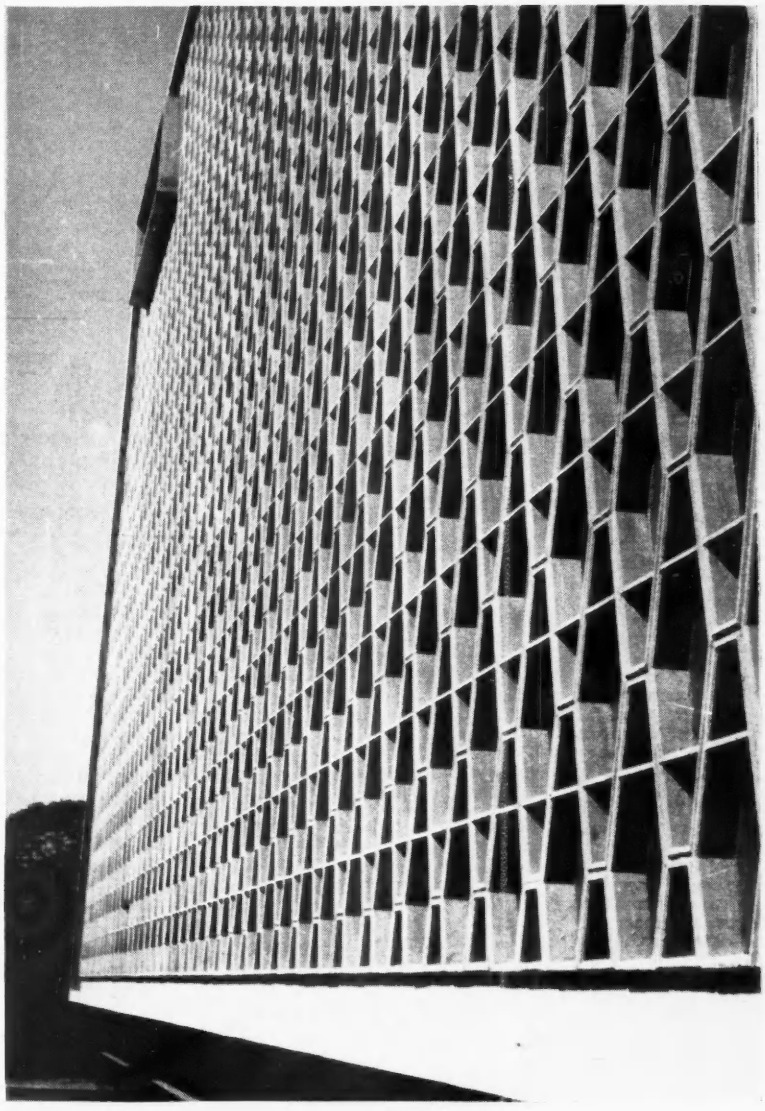
6. *The laminated timber dome of the assembly hall weighs 140 tons. The mural behind the entrance canopy was done by Burmese artists*

Subcontractors & Suppliers:—

G. and S. Allgood; E. Hill Aldam and Co., Ltd.; Anselm Odling and Sons, Ltd.; Ideal Casements (Reading), Ltd.; R. Bertelli (Italy); Ina Seito Co., Ltd. (Japan); Fredk. Braby and Co., Ltd.; Leicester Lovell and Co., Ltd.; The British Thomson-Houston Export Co., Ltd.; Marryat and Scott, Ltd.; Cheecol Processes, Ltd.; Plyglass, Ltd.; Clark and Greig, Ltd. (Rangoon); E. Pollard and Co., Ltd.; Eclair Doors, Ltd.; Pyrotenax, Ltd.; The English Electric Co., Ltd.; Quadrac, Ltd.; Falk, Stadelmann and Co., Ltd.; Raylor Bros., Ltd.; General Electric Co., Ltd.; Fredk. Sage and Co., Ltd.; Goodlass Wall and Co., Ltd.; Siemens Bros. and Co., Ltd.; Hackbridge Cable Co., Ltd.; Thorn and Hoddle, Ltd.



4



5

6

CORRESPONDENCE

Architectural Aesthetics

To the Editor of *The Builder*

SIR,—Architects are great writers and talkers. In my time I must have listened to or read thousands of papers and speeches on architectural aesthetics. Only a few of those millions of words remain clearly in the memory—a few purple patches; all the rest has vanished into limbo. Yet visual memories of hundreds of buildings, good, bad and indifferent remain strong. Is there some significance in this for lecturers on aesthetics?

Your excellent New Year number contained extracts from a thoughtful and stimulating address on 'Architecture and Industrial Design,' by Mr. R. Furneaux Jordan. I read this with great interest and full appreciation of its literary qualities, yet it left only a vague impression — a non-visual impression—on my mind. Perhaps this was my fault, though, if it were, I think such failure must be common.

May I suggest that lectures on the aesthetics of design should always be accompanied by illustrations to crystallise, as it were, the flow of words? I was surprised to note, by the way, that only about a dozen things in art and literature were regarded by Mr. Jordan as 'triumphs of the spirit,' and among them only one building, the primitive church at Torcello on the Venetian lagoons. We must be grateful to Mr. Jordan for naming one building—few lecturers, especially those who expatiate on contemporary design, do even that. If only they would come out boldly with illustrations and say unequivocally, 'This, in my opinion is good (admirable or perfect) modern architecture,' it would do more to promote appreciation of contemporary design than all the outpouring of words, much as these may enchant us.

Mr. Jordan did not say what were the qualities in the church at Torcello that 'drew tears,' and in this connection it ought not to be overlooked that tears can be drawn by qualities the reverse to those presumably inherent in Torcello. Reactions to architectural form are no doubt largely subjective. If I may be allowed to instance my own experience, I have been deeply moved, favourably and otherwise, by buildings great and small, but the nearest I ever got to tears was in contemplating the Tomb of Napoleon beneath the dome of the Invalides, though here the emotional stimulus was obviously not wholly inherent in the architecture.

Mr. Jordan's short list of tear-compelling works of art must have intrigued many of your readers. It would be interesting to have some further lists if you could find space for them. JUNIUS.

'Let's economise—I'll take it to the local authorities if you'll do the regional hospital boards.'

Life and Work of W. R. Lethaby

To the Editor of *The Builder*

SIR, — Both your leader and extract from Mr. Roberts' lecture on Professor Lethaby in your last issue made most interesting reading.

In view of the mention made in the lecture of Professor Lethaby's early life in Barnstaple, and later tributes paid to him in London, it is worthy of note that Professor Lethaby was elected an Honorary Freeman of the Borough of Barnstaple on October 28, 1926. This is a most jealously guarded honour; there are only two Honorary Freemen living at present. J. N. OLIVER.

Barnstaple.

Elemental Bills

To the Editor of *The Builder*

SIR,—The traditional Bill of Quantities with which the trade has been associated over the last 30 or 40 years has been produced to a certain extent on a trial and error system; consequently the present bill is satisfactory to the majority of quantity surveyors and contractors as being a reasonably accurate and efficient document as representing the work indicated on the drawings in the quantity surveyor's office. It enables a contractor to type out his inquiries in the shortest possible time and it produces a bill with as small a number of pages as is possible, bearing in mind that it has to comply with the standard method of measurement.

If this document is then revised to elemental bills, we immediately find, each job being different, that it is practically impossible to determine the elements for comparison purposes, and that a bill is necessitated, probably twice the size of a normal bill with consequent multiplication many times of similar items in the respective elements. This adds considerably to the work of the estimator in pricing the bill, to the typists in typing out inquiries, to the foreman on site in ordering his materials, and to the architect in visiting the site when endeavouring to find particular items for discussion with the foreman; it leads to considerable difficulty in settling the final account should the estimator vary his prices for the same items under the element headings. Should we at this stage consider an extra element for items appearing in the final account divorced from the remaining elements and priced at rates higher than those in the original bill?

In considering the above it would appear that the methods of the last 30 or 40 years are to be replaced by a jumble of figures, prices, etc., from which no clear picture of the result is produced and which means added cost to the quantity surveyor, the estimator, the builder's foreman, etc. I very much agree with the letter in your issue of January 11, from Mr. S. W. Hookway, who suggests that if an architect or client requires information additional to that contained in the ordinary bill of quantities this information should be obtained separately from the bill and an appropriate fee charged.

With regard to contractors' costs, elemental bills are not needed as the majority of the work executed today by reputable contractors is based on a bonus system whereby the whole of the labour costs are known, and it is a simple matter to add material costs, plus wastage, to ascertain an individual price. Therefore, I submit, elemental bills are of no advantage to the estimator. R. GEE.

44, Reedley-road, Westbury-on-Trym, Bristol.

Quantity Surveying and USA

To the Editor of *The Builder*

SIR,—The experience of Mr. B. Lippmann of American practice (your issue, January 4) seems to differ very much from the findings of the British Building Mission to USA of 1944 and the Productivity Team Report on Building in USA of 1950. Those missions did not report anything cumbrous in the American system. On the contrary, they were impressed by the great speed at which buildings were erected and expressed the opinion that this was the result of co-operation and organisation at all stages—co-operation between the client, the architect or engineer and the contractor.

The 350 invitations for sub-bids by an American contractor mentioned by Mr. Lippmann seems a large number for a single contract, but may to a large extent indicate an excess of zeal on the part of estimating staff; also it should be remembered that while an American contractor estimates from drawings and specifications for all and everything, including specialists, his British counterpart deals with a bill of quantities carrying PC and provisionals which are more often than not still unsettled. So far as quantity surveying is concerned, it seems there is not a great deal of difference between the two systems. In America the contractor deals with the traditional trades (brick, concrete, joiner, etc.), while in Britain this is done by the quantity surveyor. Specialists in both systems do their own estimating—a very important point when we consider that the value of such work may amount to a large proportion of a contract.

As regards estimating costs, the matter is not so clear-cut as Mr. Lippmann would have us believe. Specialists in the American system are subject to competition and there are no nominated contractors—a distinct advantage to the building owner. The quantities of traditional trades which are handled by the main contractor are done much more expeditiously and therefore more cheaply. Here, too, the advantage lies with the building owner, for competition will ensure that estimating costs fluctuate between the lower cost for large plain work and the relatively higher costs of smaller work.

I have read again the article in your issue of March 9, 1951, written by Mr. Arthur J. Willis, and feel bound to agree that the improvements suggested by Mr. Willis would greatly improve our contract procedure. I think, however, that Mr. Willis is merely adopting the American system while retaining the professional quantity surveyor. JOHN ALLAN.

78, Dorian-drive, Clarkston, Renfrewshire.

ARCHITECT'S OWN HOUSE, Bath

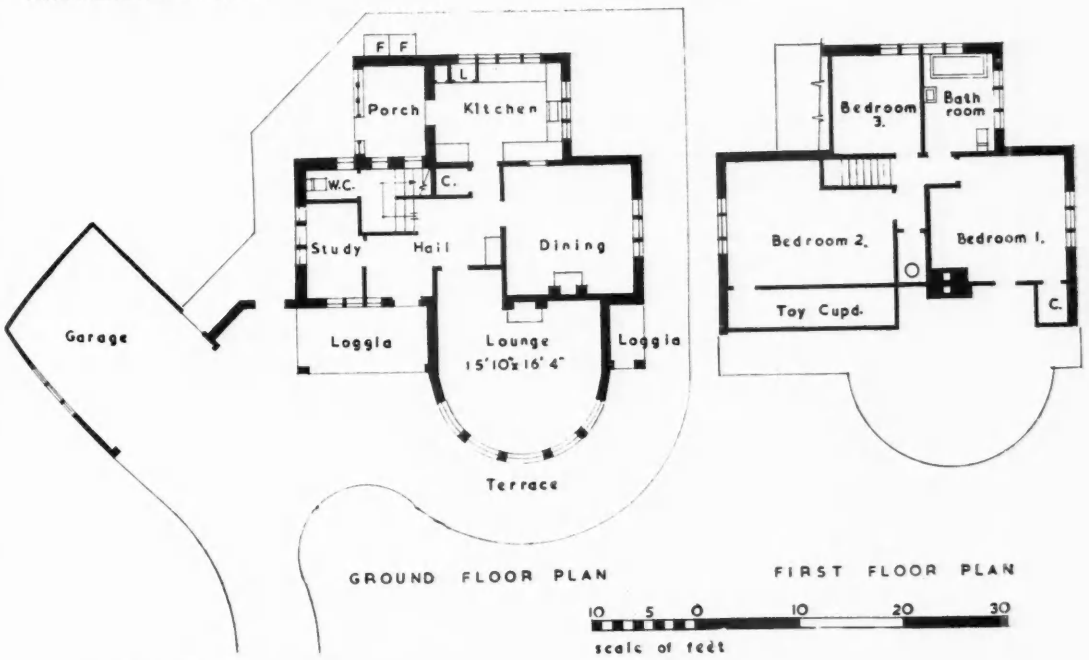
F. W. BERESFORD SMITH, ARIBA, AMTPI, AMIStructE

Builder :
HAWKINS Bros.

THE construction is 11-in. cavity walling, the outer skin of reconstructed Bath stone. The roof is timber covered with plain dark brown tiles. The first floor is board and joists.

The ground floor is of Loliondo wood block in the lounge, study and hall, and Loliondo strip in the dining-room. The staircase, door linings, architraves, etc., are of Loliondo, which is of similar appearance to Walnut, and doors are flush Walnut veneered. The staircase spandrel is filled with reeded hardboard, the open balustrade is of wrot iron with a Loliondo handrail.

Subcontractors and Suppliers: joinery, J. Long and Sons (Bath), Ltd.; paving, Hayward and Wooster, Ltd.; windows, Crittall; gates, The Ornamental Gate Co., Ltd.; wrot iron balustrade, Dunn of Bristol; doors, Veneercraft, Ltd.; hardwood, Hill, Leigh and Co., Ltd.; sanitary goods, Robert Membery, Ltd., J. A. Bladwell; flooring, C. Burden; electrical installation, Indoe Bros.; door furniture, The Metal Agencies Co., Ltd.; reconstructed stone, Reconstructed Bath Stone, Ltd.



PLANS, Scale : 1 in. = 16 ft.

Comprehensive School, Tulse Hill, Lambeth, SW2

From the south-west

J. L. MARTIN, MA, PhD, FRIBA, former Architect to the LCC.

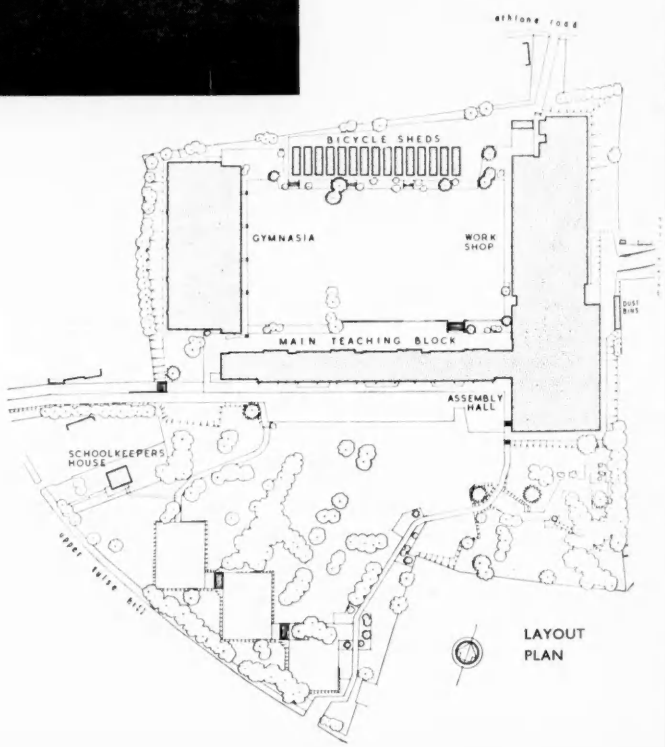
F. G. WEST, ARIBA, Deputy Architect. The late S. HOWARD, LRIBA, former Schools Architect. G. F. HORSFALL, MBE, BArch, ARIBA, Assistant Schools Architect. J. M. KIDALL, ARIBA, Architect-in-Charge.

Consultants, Structure: J. H. HUMPHREYS, AMIStructE, AMICE, Senior Structural Engineer, LCC. Heating and Electrical: J. RAWLINSON, CBE, MEng, MICE, MIMechE, Chief Engineer to the LCC. Landscape: L. A. HUDDART, FILA, FInstPA, Chief Officer of the LCC Parks Department.

Quantity Surveyors: H. H. B. STEWART & Co.

Clerk of Works: A. F. WOODLEY.

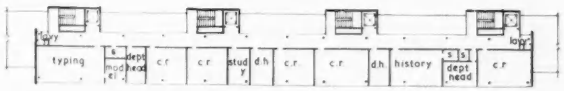
Builders: LESLIE & Co., Ltd. (Foundations). RUSH & TOMKINS, Ltd. (Superstructure).

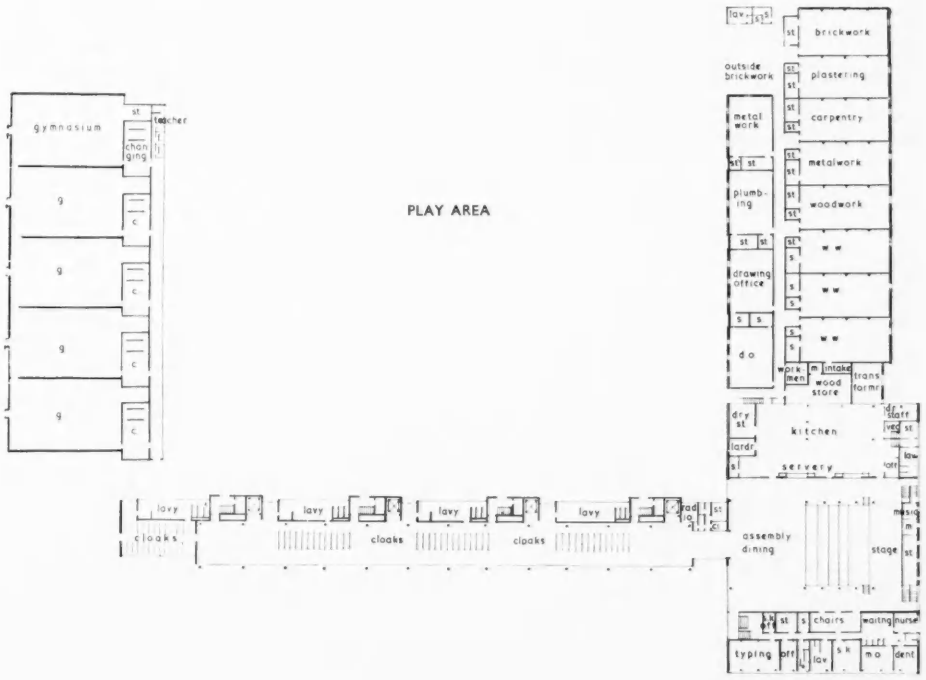


LAYOUT PLAN

TYPICAL SECOND FLOOR PLAN

FIRST FLOOR

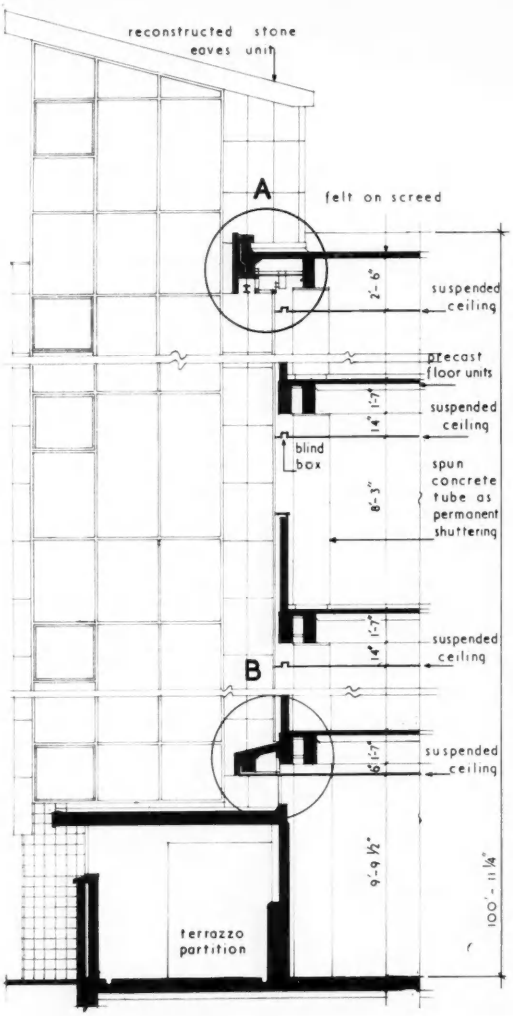




GROUND FLOOR PLAN, Scale : 1 in. = 96 ft.

View from the east

Art room



KEY SECTION THROUGH REAR ELEVATION, Scale: 1 in.=8 ft.
Details are shown on the opposite page

THIS school for 2,000 boys is planned on a site of 8.4 acres situated off Upper Tulse Hill, Lambeth, part of which was formerly the playing fields of the Strand School. It has a gentle slope to the north and many very fine trees which have been retained and incorporated in the layout of the new school.

As the site is some 3½ acres smaller than the Ministry of Education minimum regulation for schools of this size, the teaching accommodation has been planned in a nine-storey block and the maximum of open space preserved around the building. This nine-storey block contains most of the general teaching rooms, the library, art and pottery rooms, and all laboratories. This accommodation is disposed round four stair and lift towers (each lift large enough to carry a whole class). The main circulation is thus on the vertical principle and horizontal communication corridors occur only on the first, fourth and seventh floors. By this method of planning great economy in floor area was achieved.

The whole of the ground floor of the teaching block is occupied by cloakrooms, lavatories, etc., other lavatories being disposed at each end of each of the different floor levels.

The assembly hall will seat three-fifths of the school and is planned adjoining the teaching block to the east and connected to it by a single-storey link. Dining will take place in this hall and the kitchen is planned on the north side of it. General staff and administration rooms are also incorporated in this part of the building.

The building trades workshops have been designed as a single-storey structure, north lighted, and are placed to the north of the assembly hall block.

The five gymnasia are planned to the west of the main teaching block, again a single-storey structure and connected with the main block by a covered way.

Construction, Teaching Block: Construction is generally of reinforced concrete incorporating novel features of prefabricated building technique. The structure includes the use of spun concrete tubes as permanent shuttering to circular columns; specially designed precast T-section floor slabs and prefabricated upstands at each floor level which are formed of 3 in. woodwool set in a concrete frame with legs which stand in slots provided in the periphery edge beams.

Apart from the columns and main cross beams which occur at 23 ft. 4 in. centres and are in *in situ* concrete the whole of the structural frame was precast on site and hoisted into position by tower crane. The floor infill consists of precast T-slabs, factory made, 14 in. wide, with clear span of 8 ft. between edge and secondary beams.

Science laboratory

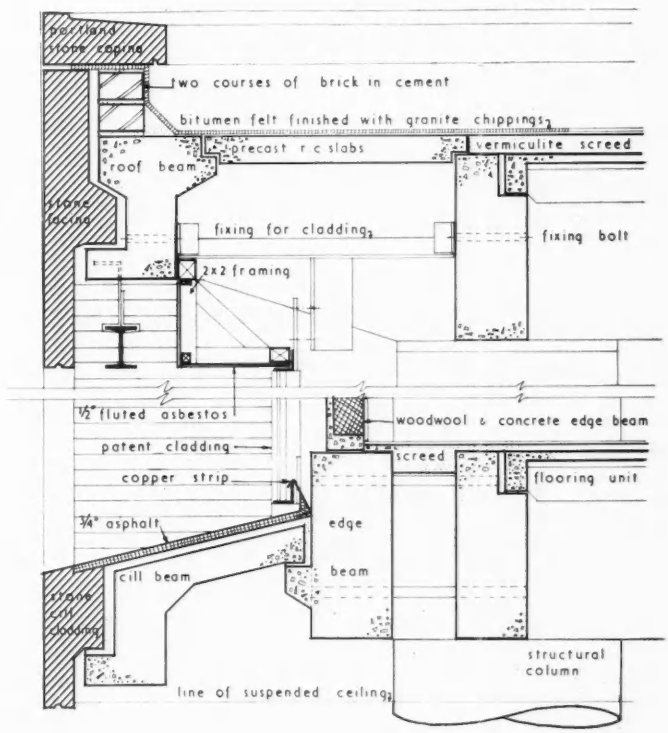
Comprehensive School, Tulse Hill

Around the perimeter of each floor level are two concrete beams 6 in. apart and connected together with bolts and distance pieces. The exterior beam has threaded ferrules cast into its face at 40 in. centres to receive the angle which supports the glass curtain walling. The internal beam is rebated to receive the floor slabs. The reason for the two edge beams 6 in. apart was to allow access for heating and other services to the floor above.

All the services were preplanned and holes were cast in the beams for them, also 'Philplugs' were cast in as grounds for various fixings.

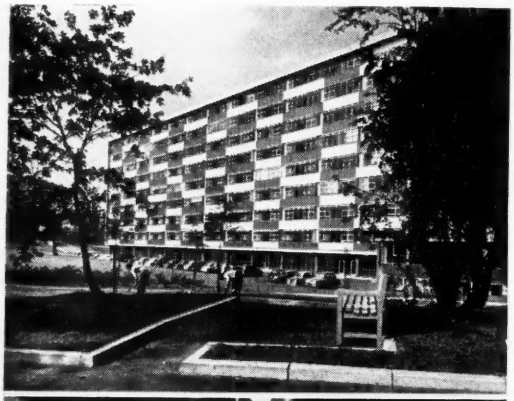
The large measure of prefabrication adopted enabled the contractor to use methods which allowed a rate of erection to be achieved which was between three and four weeks per complete floor. The four stair and lift towers on the north side are *in situ* concrete faced with precast green 'Mineralite' slabs and glass curtain walling, these towers being 'linked' to the main frame at every floor level. The gable ends of 6 in. thick concrete are faced with Portland stone which continues as a frame at head and cill of the glass walling to each elevation.

The contract price was £527,738.



STRUCTURAL DETAIL OF HEAD AND CILL AT FRONT AND BACK ELEVATIONS OF THE MAIN TEACHING BLOCK SURROUNDS

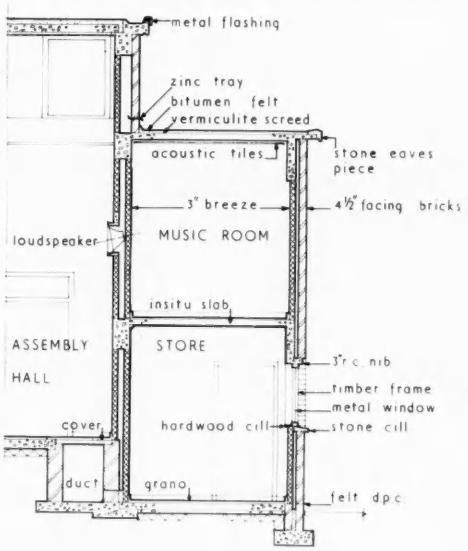
Scale: One-sixteenth full size



South elevation

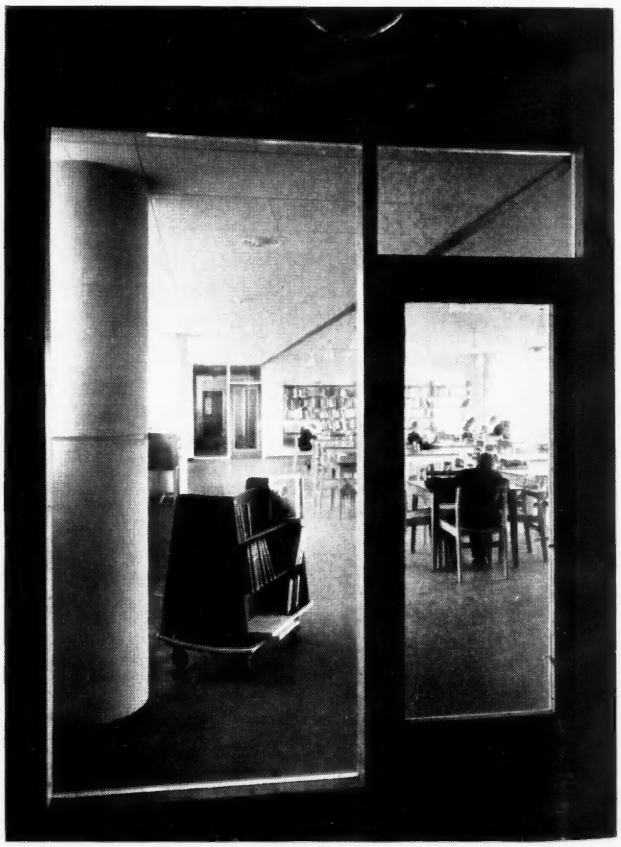
Comprehensive School, Tulse Hill

Gymnasium



STRUCTURAL DETAIL

Scale: 1 in. = 8 ft.



Subcontractors & Suppliers :—

Glass curtain wall and Hilsulate panels and dome-lights, Hills (West Bromwich), Ltd.; 'Bellrock' partitions, Rush and Tompkins, Ltd.; plastering work, Plastering, Ltd.; heating and ventilation, Norris Warming Co., Ltd.; electrical installation, H. J. Cash and Co., Ltd.; precast T-section flooring slabs, Fabricrete, Ltd.; runway beams and hangers, Scaffolding (Great Britain), Ltd.; sanitary fittings, Stitsons Sanitary Fittings, Ltd.; water storage tanks, Mather and Platt, Ltd.; mineralite faced cladding slabs and reconstructed stonework, Kendall's Stone and Paving Co., Ltd.; 'Semastic' and cork floor tiles, Semtex, Ltd.; suspended ceilings, Anderson Construction Co., Ltd.

Glazed kitchen hood, Norris Warming Co., Ltd.; decorative wall tiles, Carter and Co. (London), Ltd.; floor and wall tiling, Parkinsons (Wall tiling), Ltd.; ironmongery, Lockerbie and Wilkinson, Ltd.; Granwood flooring, Granwood Flooring Co., Ltd.; tar-paving work, A. C. W. Hobman and Co., Ltd.; roller shutters, G. Brady and Co., Ltd.; terrazzo work, The Mosaic and Terrazzo Precast Co., Ltd.; wood block and strip floors, Vigers Bros., Ltd.; fire-resisting door to fuel store, Durasteel, Ltd.; entrance gates and balustrading generally, R. Smith (Horley), Ltd.; hairpin fencing, Bayliss, Jones and Bayliss Co., Ltd.; chain-link fencing, Bayliss, Jones and Bayliss Co., Ltd.

Plastic lettering, Applied Lettering; roofing felt, Rock Asphalt Co., Ltd.; joinery fittings, C. Plowman, Ltd.; lightning conductors, Blackburn, Starling Co., Ltd.; painting, Weldec Painting Co., Ltd.; fume cupboard sliding doors, Quicktho and Co., Ltd.; plumbing, Thorpe Bros. (Wimbledon) Ltd.; asbestos cement roofing, John Denyer, Ltd.; Portland stone cladding, Bath and Portland Stone Firms, Ltd.; spun concrete tubes, Spun Concrete, Ltd.; castellated steel beams, United Steel Structural Co., Ltd.; piled foundations, Cementation Co., Ltd.; tanking (felt), Ragusa Asphalt Co., Ltd.; lifts, Hammond and Champness.

The Library

The Building of a New Town—Crawley

2.—'LAYING IT ON'

By S. Gordon Joseph

EACH year brings to Crawley another 5,000 inhabitants. Up till recently the provision of at least the essential buildings has kept pace with, and in certain instances has been even slightly ahead of, each increase of population. But lately some categories of building have fallen behind, notably schools and houses. This has been due largely to circumstances which could hardly have been expected at the time of the master plan in 1948, such as the recent 'credit squeeze.'

Nevertheless, a high standard has been achieved in the provision of buildings, bearing in mind especially the magnitude of the task. A glance at the master plan will give some idea of the latter. The designated area of the new town was established as some 6,000 acres around old Crawley, two-thirds of which was to be developed, according to the plan, by the appointed Corporation over a period of about 13 to 14 years, and allowing for a population of 55,000 at the end of that time (1963). The remaining one-third of the area was to be preserved as farmland, park and forest. The ultimate population is estimated at somewhere in the region of 80,000, making it one of the largest inland towns in SE England.

The basis of the plan is to divide the 4,000 acres scheduled for development into clearly defined functional districts: for residence, work, public services and recreational facilities. Accordingly, the master plan shows nine residential neighbourhoods of sizes varying from about 150 to nearly 300 acres, each with an estimated population of between 4,300 and 7,600 by 1963. These neighbourhoods are grouped more or less contiguously around the town centre in two belts.

Neighbourhood Units

The inner group consists of West Green (the first of the new town neighbourhoods to be built), Three Bridges and Northgate and Southgate (one at each end of the High Street axis). With the exception of Southgate (now under construction), these neighbourhoods have been substantially completed. The outer circle consists of Pound Hill, Ifield and Langley Green (one of the only neighbourhoods built on land formerly entirely undeveloped)—these three are now more or less completed; and Gossops Green and Tilgate where the major work remains to be done. Half of these outer neighbourhoods lie on the far side of the bypass around Crawley old town (marked in the master plan as 'Crawley Ring'); and their farthest points stand about 1½ miles from the main Town Centre.

I have gone into some detail on this subject of the neighbourhoods and their various features and locations, because such matters have an important bearing on the type, amount and priority of building which takes place in the neighbourhood concerned. In a district like West Green, situated right next to the centre of Crawley, the buildings for certain facilities and services had a relatively low priority—shops, for example, and recreational premises—because the existing old town provided these services already and very close at hand. Langley Green, on the other hand, lies a mile from the amenities of Crawley's centre, experiences a sense of separateness from the town because of the intervening arterial bypass, and is located in an area where there had been no previous development. Thus, the new inhabitants needed all essential buildings, in addition to their houses, practically from the word 'go.'

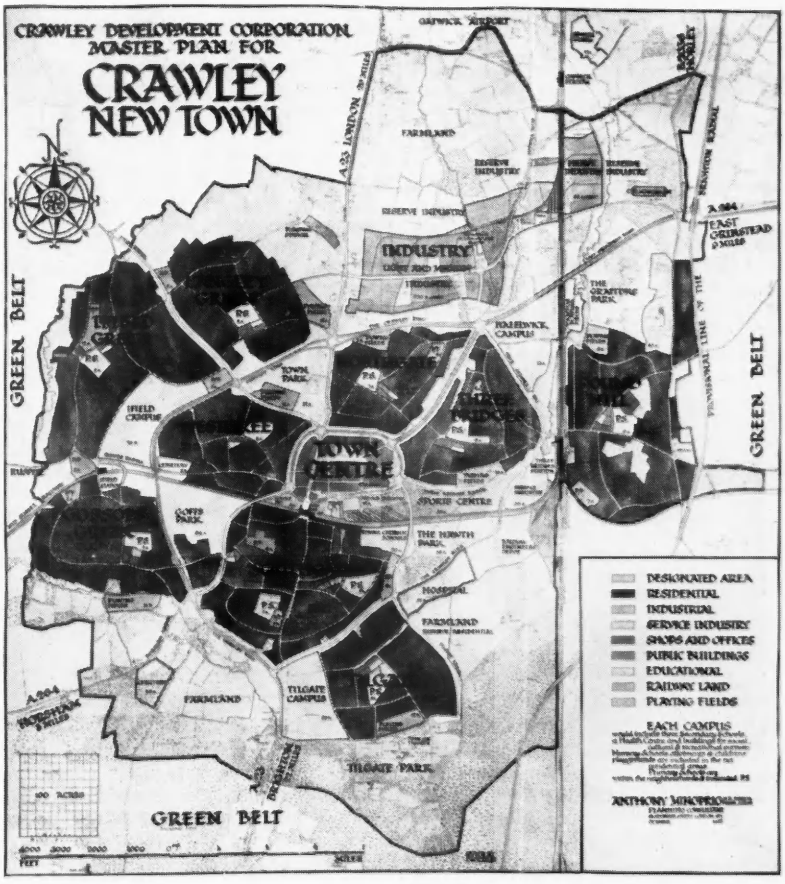
Other matters arise from the order in which the various neighbourhoods have been built. The early stages of occupation and settlement, in the first districts to be completed, provided lessons for the Development Corporation which have influenced buildings in later neighbourhoods. For example, multi-storeyed blocks of flats in West Green and Northgate are not repeated in any other neighbourhood, because they proved to be insufficiently popular among the large majority of newcomers to justify their erection elsewhere. But to maintain the given density in neighbourhoods without tall blocks there had to be a reduction in the average space per house.

Building differences between one neighbourhood and another have also been brought about by financial considerations. Because of the national economic policy and cuts in government spending in the past year or so, features of buildings in the more recently completed neighbourhoods tend to be kept to essentials. More than that, even whole buildings themselves, which were implied in the master plan as reasonably early needs for each district, have not yet been provided in many cases. The Community Centre is one such example.

The Community Centre

This was to be the building, at the heart of each neighbourhood, for the recreational and leisure-time needs of its residents: for club meetings, dances, discussion of neighbourhood affairs and so on. West Green, however, is the only one which has a properly equipped and permanent building. For each of the others, the community centre is a 'hut.'

The Development Corporation, though by far the largest builder of houses in the New Town, is by no means the only source of homes. Up to date, nearly 6,500 houses have been built by the



Corporation. The Town's local council has provided an additional one-tenth of this number since the war, and a similar extra number (650) have been built by private enterprise for sale instead of renting. The private proportion of new housing will be even greater in the future. Whereas nearly 3,000 more houses are under construction or planned by the Corporation, the comparative figure for private enterprise is 780. Yet only two years ago there were practically no post-war privately built houses in the new town.

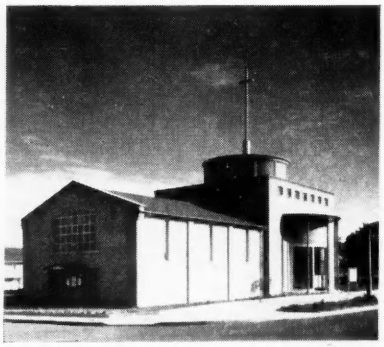
This increasing proportion of houses for sale is in accordance with Development Corporation policy. It is felt that a new town composed only of citizens whose predominant interests—work, play and residence—were confined solely to the town could become socially inbred, especially when their age groups and employments were also restricted in variety. The private-house residents, not confined to the Corporation-house tenancy qualification of working in the new town, are not so tied to its affairs and thus partly offset any tendency towards excessive provincialism.

Employment

Turning from the residential aspects of new town building, the other major feature is that of employment. Indeed the Manor Royal area—the chief employment district of Crawley—is the basis of the new town's success and survival. The population consists overwhelmingly of industrial employees and their families, who have come down with their firms when the latter moved from London and re-established their factories in Crawley.

Manor Royal is situated in the northern part of the designated area. This location was intentionally chosen so that any industrial traffic between London and the new town factories would not have to come across the town centre or the residential neighbourhoods. In addition, the existing communications between London and the industrial area's location are excellent. The main A23 highway to London runs along the west side of the area, the main railway line runs along the east side. To the north, just a mile or so away, lies Gatwick Airport, conveniently situated for such time as the helicopter and aeroplane play a greater part in industrial transport. The Master Plan envisages development in the Manor Royal area of 220 acres of light and medium industry, plus 48 acres of heavy industry in the most north-westerly corner of the designated area, on the other side of the main railway line. But plenty of space has been reserved for the expected expansion of industry.

In 1948, opponents of the new town had declared that the economic risks and costs of uprooting a large and established factory in the London region and transferring it to a country town some thirty miles away would be too great. Many industrialists seem to have felt otherwise. For the fact



The Anglican Church at Three Bridges Neighbourhood Centre offers a striking example of modern church architecture and provides a church with adjoining hall which can be used independently or as part of the church. Architects: N. F. Cachemaille-Day and Partners

is that over 60 factories, employing more than 8,000 people, are in production or nearing completion. And not only have applications from firms, to establish their quarters in Crawley, been up to expectation, but many concerns have already found it necessary to expand their premises and even to build another

Sunnymead, showing flats built by the Development Corporation to a 'star' plan which enables each living-room to catch the sun

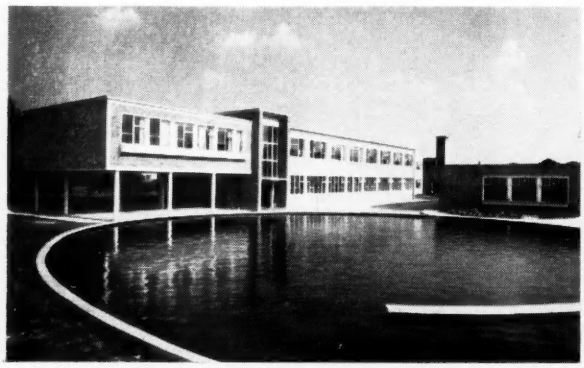
factory (19 firms out of the first 25 to come to Manor Royal have done so).

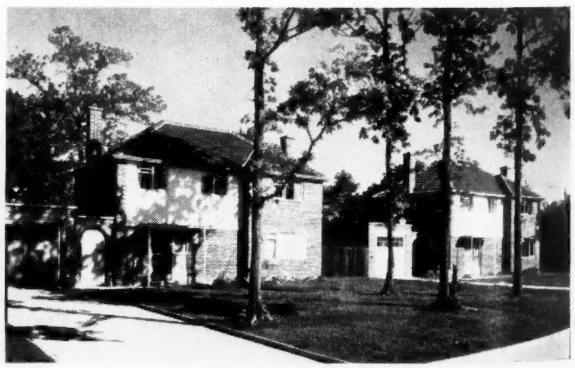
The range of the industrial area's products and processes is quite wide—printing, high vacuum techniques, plastics, food processing, laboratory equipment being just a few examples. Many of the firms had their factories designed by architects of their own choice, but the Development Corporation also builds and provides 'standard factories' for firms requiring smaller premises, many of which have been erected on the east side of the Manor Royal area.

Perhaps the major construction problem of the Corporation has always been to maintain a balance between population growth and the expansion of facilities. Provision of houses too far behind the completion date of factories means considerable inconvenience and economic loss for the workers concerned in having to travel to Crawley and back each day, probably from London. On the whole, this balance has been successfully maintained until recently, when the supply of houses began to fall below requirements for the first time.

Next week, I shall select one of Crawley's more urgent problems to examine in a little closer detail.

(To be continued)





Left: Office and research block for the new factory of Metals Division of Telegraph Construction and Maintenance Co., Ltd. The pond in the foreground serves to cool water for factory processes. Architect: the late Arthur H. Russell, LRIBA, AIAS. Right: Detached houses of superior type with adjoining garage built by independent contractors by arrangement with Crawley Development Corporation for sale freehold in Three Bridges Neighbourhood. Built and designed by Taylor Woodrow Homes, Ltd.

NO-FINES CONCRETE FLATS, Toryglen, Glasgow

J. AUSTEN BENT, ARIBA, FRIAS, AMTPI, DipTP, Chief Technical Officer SSHA

ANDREW M. RITCHIE, FRICS, Quantity Surveyor

BUILT by the Scottish Special Housing Association's direct labour organisation

Construction Manager : R. H. MACINTOSH, BSc, AMICE, AMIMunE

THE Scottish Special Housing Association, Ltd., introduced into Scotland in 1938 the technique of house building in no-fines concrete using heavy aggregates, as a means of relieving unemployment in Lanarkshire. Shortages of manpower and of traditional materials, coupled with the great housing need that followed the last world war, have encouraged the development of this technique and it has made great advances because of the shortage of bricks and bricklayers and the high degree of mechanisation which is possible. From its initial use in casting monolithic walls of two-storey cottages has grown its widespread use in the erection of flats of three or more storeys in height.

The structural principles employed are based on German experience, as follows:—

(*a*) reinforced concrete box foundations of great rigidity forming a basement storey;

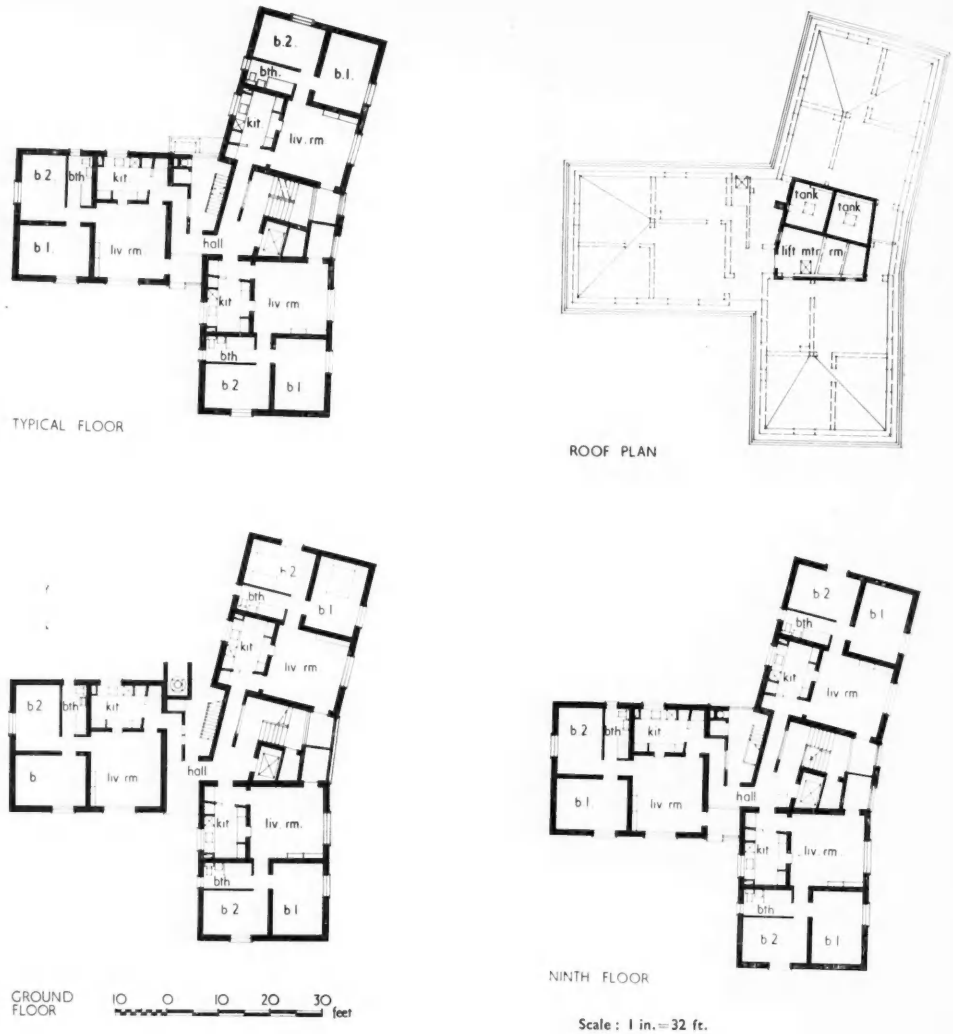
(*b*) distribution of all loads as equally as possible on to the external and internal no-fines concrete walls of the superstructure; and

(*c*) bracing the walls by means of continuously reinforced *in situ* concrete floors which are linked to the walls by steel dowels and a ring anchor of reinforcing bars at each floor level.

The constructional feature which makes these flats unique in the history of building construction in Great Britain is that, for the first time in a building of this height, the no-fines concrete walls are entirely loadbearing, there being no reinforced concrete or steel frame to support the loads, coupled with the fact that none of the walls is more than 12 in. in thickness: each wall is maintained at the same thickness for the full height of the building, the amount of cement used in successive storeys being reduced to accord with the reduced loads imposed upon them.

Number of flats: 2 blocks of 30 flats per block; i.e., 3 flats per landing, with an area of each flat of 646 sq. ft. Accommodation: living-room, 195 sq. ft.; kitchen, 65 sq. ft. net; bathroom, 46 sq. ft.; bedroom No. 1, 135 sq. ft.; bedroom No. 2, 110 sq. ft.; private balcony, 32 sq. ft. average.

The foundations are a reinforced concrete box foundation which imposes a maximum calculated



Scale: 1 in. = 32 ft.

No-fines concrete flats, Toryglen, Glasgow

design load upon the subsoil of 1.3 tons per sq. ft. Walls—External: 12 in. thick loadbearing no-fines concrete, plastered internally and roughcast externally. Internal: loadbearing walls 10 in., $8\frac{3}{4}$ in. and $8\frac{1}{4}$ in. thick no-fines concrete plastered on both faces. Partitions: Timber framed, finished in plasterboard.

Floors are 4 in. thick reinforced concrete with fibre-board insulation and finished in thermoplastic tiles or timber boarding. The roof is 4 in. thick reinforced concrete with fibre-board insulation, screeding and asphalt.

Space-heating is by off-peak electrical floor heating (except bedrooms), fully controllable by the tenant. Additional heating may be provided by an electric panel fire which is installed in the living-room. Domestic hot water, an electric immersion heater designed to provide, by off-peak current, 30 gals. of hot water per flat per day at a temperature of 160 deg. F., fully controllable by tenant. A fully automatic electric lift designed to carry six persons is provided.

Refuse disposal by 15 in. dia. glazed fireclay pipes with self-closing hopper at each floor level: an electric incinerator is provided at ground-floor level.

Water supply is by concrete storage tank for 3,000 gals. of water on the roof fed by an automatic pump from additional storage tanks holding 4,000 gals. in the basement. Radio and television: communal aerials are provided with requisite amplifiers and socket outlets to each flat, and GPO telephone points are provided in each flat.

Construction: The no-fines concrete superstructure was commenced in mid-March and proceeded at the rate of one storey each week alternating between the two blocks. The shuttering for the superstructure consisted of the standard storey-high panels (perforated steel plate welded to a steel frame) developed by the Association for the construction of three- and four-storey flats. Actual strengths obtained, in fact, indicate that ten storeys is by no means the limiting height for a structure of this type.

The general manager of the Association is S. A. Findley, OBE, MICE, FRSH, MIMunE, Registered Architect.

News of the Week

Bristol Exhibition Withdrawn

THE Bristol Museum and Art Gallery Committee met on January 17 and upheld the action of Dr. F. S. Wallis, director of the museum, in withdrawing the 'Our City' exhibition two days after it opened. The exhibition was composed of photographs emphasising some of the uglier features of Bristol and was arranged by the Architectural Forum associated with the Bristol and Somerset Society of Architects.

Complaints were made to Dr. Wallis, and he withdrew the exhibition pending the decision of the committee. On January 17 the committee were shown the photographs together with the captions which also drew criticism. Their decision, it is understood, was unanimous. The exhibition has been replaced by a display entitled 'Art in Architecture' which is a permanent feature of the Museum and Art Gallery building. The group of architects who organised the 'Our City' exhibition have decided to try and show it elsewhere in the city.

To Speak at Builders' Dinner

MR. HENRY BROOKE, Minister of Housing and Local Government, will respond to the toast of 'Her Majesty's Government' at the annual dinner of the NFBTE to be held at the Dorchester Hotel, London, on January 29. The toast will be proposed by Mr. Nigel Hannen, president of the Federation.

The toast of 'The Guests' will be proposed by Mr. L. A. Walden, senior vice-president, and the reply will be given by Mr. Kenneth M. B. Cross, PRIBA.

The annual general meeting of the National Federation will be held on the following day at the Liverpool Victoria Friendly Society's building, Bloomsbury-square, WC1, when awards will be made to successful building students in the Federation's national prize scheme.

New London Hotel

PLANS are nearing completion for the erection of a large hotel of about 400 bedrooms, on a site in Sloane-street at present occupied by Nos. 1 to 11, Cadogan-place and 163 to 165, Sloane-street. The architect is Mr. Michael Rosenauer, FRIBA.

The land has been acquired by the sponsors of the scheme, which is now being considered by the London County Council. If approved, it is estimated that the cost will be about £2½m.

It is hoped that the hotel will be run by the Hotel Corporation of America, and Mr. Gerald Glover, of Park-street, W, the sponsor of the development, has left for New York to complete contracts.

Atomic Power for India

INDIA is to build an atomic power station with a capacity of 140,000 kilowatts, Mr. Gulzarilal Nanda, Minister for Irrigation, announced at a conference of power engineers at Bangalore. Other 'Overseas Building' news is on page 208.

A Birmingham Post

A POST offering opportunity for a large measure of responsibility for dealing with Birmingham's civic centre development (which includes a wide variety of buildings) is advertised in this issue by the City Architect's Department. There is scope for an architect interested in civic design.

Professional Announcement

MR. K. S. LEVENSON, AFS, quantity surveyor, announces that he has moved office to 6, Exchange-court, Strand, WC2 (tel.: Covent Garden 0532).

ABS OLD PEOPLES' HOMES.—The view above is of a model of Mr. Clifford Culpin's design for these homes, to be built at East Clandon, Surrey. The model is at the Building Centre, and will afterwards tour the Allied Societies' areas

COMING EVENTS

MONDAY, JANUARY 28.

RICS.—'Problems in Rural Planning.' By Mr. R. L. Stirling, AMICE, ARICS, 12, Gt. George-st., SW1. 5.45 p.m.

RIBA.—Library group meeting. 'Drawings in the Uffizi after Ancient Roman Buildings.' By Dr. A. Noach. 66, Portland-pl., W1. 6 p.m.

TUESDAY, JANUARY 29.

METROPOLITAN PUBLIC GARDENS ASSOCIATION.—'A New Approach to Civic Design.' By Professor Sir Albert Richardson, KCVO, P-PRA, Blue Coat School, Caxton-st., SW1. 6.30 p.m.

NATIONAL FEDERATION OF BUILDING TRADES EMPLOYERS.—Annual dinner. Dorchester Hotel, W1. 7 p.m.

WEDNESDAY, JANUARY 30.

NFBTE.—Annual meeting. Liverpool Victoria Friendly Society's building, Bloomsbury-sq., WC1. 10.30 a.m.

ARCHITECTURAL ASSOCIATION.—General meeting. 'Dead Centre—the Crisis of Planning and the Future of Our Cities.' By Mr. Graeme Shankland. 36, Bedford-sq., WC1. 8 p.m.

UNIVERSITY COLLEGE, LONDON.—Exhibition of Drawings. To be opened by His Excellency the High Commissioner for South Africa. Gower-st., WC1. 6.15 p.m.

ARCHITECTURAL ASSOCIATION.—Exhibition of photographs by members. Members' rooms. 34, Bedford-sq., WC1. 10 a.m.-6 p.m. daily, Saturday 10-12, until February 22.

ASLIB.—'Communication of Science by Means of Film.' By Dr. A. R. Michaelis, BSc. Royal Society of Arts, John Adam-st., WC2. 6 p.m.

INCORPORATED INSTITUTE OF BRITISH DECORATORS AND INTERIOR DESIGNERS (LONDON AND GENERAL DISTRICT).—'Architecture and the Applied Arts in Interior Decoration.' By Mr. E. Hollamby, ARIBA. Royal Society for the Promotion of Health. 90, Buckingham Palace-rd., SW1. 6.30 p.m.

INCORPORATED ASSOCIATION OF ARCHITECTS AND SURVEYORS (JUNIOR MEMBERS' ORGANISATION).—'Are Architects and Quantity Surveyors Giving the Best Possible Service to the Building Owner?' Discussion. 29, Belgrave-sq. 7 p.m.

THURSDAY, JANUARY 31.

INSTITUTE OF BUILDERS: Licentiate Discussion Club.—Lecture on 'The Duties and Problems of a Public Health Inspector with special reference to the Building Industry.' By Mr. H. W. Walters, FRSH, Chief Health Inspector of the Royal Borough of Kensington. 6.30 p.m. (Members and guests only.)

FRIDAY, FEBRUARY 1.

RICS (JUNIOR ORGANISATION).—Annual dance. Bush House Restaurant, Aldwych, WC2. 7 p.m. Black or white tie.

INCORPORATED ASSOCIATION OF ARCHITECTS & SURVEYORS (LONDON AND HOME COUNTIES BRANCH).—Annual dinner and dance, May Fair Hotel, Piccadilly, W1. 7 p.m.

CEMENT & CONCRETE ASSOCIATION.—'Large-Span Prestressed Concrete Bridges Constructed by the Freyssinet System.' By Y. Guyon. Institution of Civil Engineers, Gt. George-st., SW1. 5.30 p.m.

FROM 'THE BUILDER' OF 1857

Saturday, January 24, 1857

DISTRESS OF BUILDING OPERATIVES.—Some years ago a first-rate carpenter, bricklayer or mason would have been satisfied with his 4s., 4s. 6d. or at most 5s. a day; but with the artisan finding that building prospered, that there was a great demand for labour, immediately increased his claim for 3d. a day and then advanced again and again, until at length the wages came to 5s. 6d. But not content with the increase, they have claimed their Saturday holiday. So that builders, if they yield to these large wages, can make no profit for their heavy outlay on labour and can only realise something for themselves out of the materials. T.L.D.

London Master Builders' Association

MINISTER OF LABOUR ON NEED FOR APPRENTICES

THE Minister of Labour and National Service, Mr. Iain Macleod, PC, MP, was guest of honour at the luncheon given by the London Master Builders' Association on Tuesday at the Park Lane Hotel. The President, Mr. Kenneth C. F. Foster, FIOB, was in the chair.

MR. FOSTER, in the course of his remarks, pointed out that builders employed over a million men, which meant that they ranked in the matter of employment with the first two or three industries in the country. Having built up their labour force to this figure from 200,000 or 300,000 after the war, they were naturally most anxious to maintain it at this level, and he was sure that there would be a great need for building work for many years to come. He trusted, therefore, that the Government would be successful in stabilising the economy of the country so that the building industry could be used to the full.

MR. MACLEOD said that the Association's annual general meeting took place against a background of two main problems—political and economic. He fully realised that the measures which the Government had had to take to reduce petrol and oil consumption would cause some difficulties for the building industry, but these measures were temporary, and the underlying strength of our economy would bring us through.

'There is no need for me to tell you,' he continued, 'that we must earn a larger surplus in our balance of payments. This depends on our ability to make the best use of what I may call the three "M's"—money, material and manpower—in the quest for the increased productivity at lower costs, on which our survival as a trading nation will stem.

'First, then money—our financial resources. There is still, I know, an enormous amount of building work to be done, but the Government's main policy must be to encourage more production for export and, to do this, by damping down production for domestic consumers and, in the short term, domestic industrial development. The braking effect of this policy is already evident, but we in the Government believe that policies of restriction should only be short-term policies, and we will not restrain development one moment longer than is necessary.

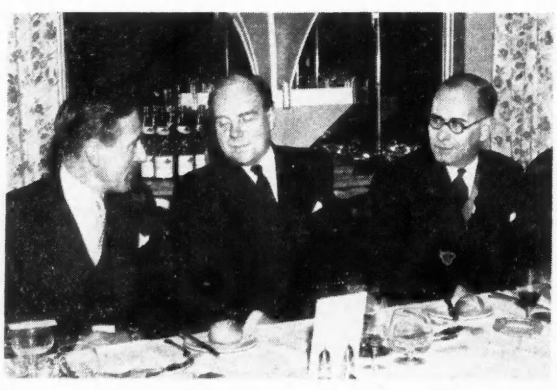
'Second—manpower. I will concentrate on the waste of manpower and materials arising from industrial accidents. The upward trend in the total number of accidents reported from building operations has continued. In 1955, there were 184 fatal accidents and 14,377 non-fatal accidents reported in the building industry. This was an increase of five per cent. over 1954. I think it is best to form specialised accident prevention groups in your own industry, and where discussion can centre round specific problems. The Royal Society for the Prevention of Accidents helps in the development of courses of this kind.'

This brought Mr. Macleod to his third point—the need for good human relations in industry, not only as an end worthwhile in itself but also as a direct contribution to greater productivity. Many of our employment problems today stemmed from a sense of insecurity. That was why he was consulting industry about proposals for a longer period of notice for workers with long service.

'As well as making the best use of our adult manpower,' the Minister continued, 'we must also make the best use of the young people coming into industry—girl power and boy power. Whatever technical advance there may be in the building industry, there will always be a need to recruit and train sufficient young men of the right calibre to carry on the traditional crafts and to train for managerial responsibility. In the next few years, there will be a special opportunity for such recruitment. There will be a marked increase in the number of young people eligible to leave school. In 1956, the figure was at its lowest (613,000); it will have risen to half as many again by 1962 (930,000), but thereafter it will decrease to 730,000 in 1966.

'The whole subject of apprenticeship and similar training is receiving the attention of the National Advisory Council, a sub-committee of which is examining the adequacy of the number of apprenticeships available and the quality of the present training arrangements. Let me quote from the triennial report of the National Youth Employment Council published last December: "we would suggest to industry that the next few years will provide it with a unique opportunity to build up its skilled labour force by increasing its intake of apprentices. It is an opportunity that is unlikely to recur."'

The Minister concluded: 'Maximum efficiency is not only desirable at this moment, it is a national duty that is laid upon us all.'



Mr. W. Kirby Laing, incoming President LMBA (left), and Mr. K. C. F. Foster, outgoing President, with Mr. Iain Macleod, PC, MP, Minister of Labour, at the LMBA luncheon on Tuesday

The General Meeting

THE annual general meeting followed after luncheon, when the retiring President, Mr. Foster, took the chair. In his valedictory address, MR. FOSTER said that the prospects for builders as we entered 1957 were not very bright, for as fast as we surmounted one difficulty, another assailed us. At present it was two together—the rationing of petroleum products and a falling off in the volume of work. On the other hand, the Rents Bill now before Parliament should, when it became law, bring work to firms which carried out maintenance work. 'Of course,' added Mr. Foster, 'the long-term outlook remains favourable, as there is still so much to be done when the economy of the country once again has been restored.'

On the question of fixed prices, Mr. Foster said: 'This time last year my predecessor suggested that we should be more courageous in giving prices not subject to the fluctuations clause. Some progress was made, and but for the recent international troubles I think that the time would now have arrived when an even greater step towards the elimination of the fluctuations clause might have been taken.

'To me, therefore, it is surprising that the Government, who are so keen to return to fixed price tendering, should aggravate the inevitable rise in price of certain materials by increasing the duty on petrol and diesel oils used in road vehicles. This is bound to have very wide repercussions on prices as a whole.'

The Annual Report was adopted.

New Office-bearers Elected

AT the annual general meeting of the London Master Builders Association on Tuesday (January 22), Mr. W. Kirby Laing, MA, MICE, Chairman of John Laing and Son Ltd, was elected President for the year in succession to Mr. K. C. F. Foster.

Mr. Stanley Farrow, MBE, of Howard Farrow, was elected Senior Vice-President, and Mr. K. G. Pearce, TD, of Pearce Bros, and Mr. E. J. Cook, of Richard Costain's, Junior Vice-Presidents.

Mr. L. J. Holloway was elected Honorary Treasurer in succession to Mr. D. E. Woodbine Parish, who has held the position for the past three years.

The following members were elected to the Council (names are given in order of number of votes cast): Messrs. L. H. Colls (Trollope and Colls, Ltd.); R. F. Mansell (R. Mansell, Ltd.); R. W. Brocksopp (Buckingham and Sons, Ltd.); A. Green (Geo. Moss and Sons, Ltd.); A. G. Miles (Hammond and Miles, Ltd.); G. H. Noyes (E. H. Smith (Croydon), Ltd.); F. R. Leadsom (Thomas Lowe and Sons, Ltd.); S. H. Weeden (Rice and Son, Ltd.). Mr. S. A. H. King (K.S.T. (Builders), Ltd.), was elected honorary auditor.

SOCIETIES

RIBA

Notes from Council Minutes

THE following notes are taken from the minutes of the RIBA council meeting held on January 8:—

The Honorary Fellowship.—The council elected as Honorary Fellows Sir Kenneth Clark (HonA), Admiral of the Fleet the Earl Mountbatten of Burma, Sir Osbert Sitwell, Marshal of the Royal Air Force Baron Tedder, The Very Rev. Charles Laing Warr, and The Most Rev. and Right Hon. The Archbishop of York.

The Honorary Associateship.—The council elected as Honorary Associates Sir Colin Anderson, Mr. John Betjeman, Dr. D. W. Logan, Principal of the University of London, Mr. John Piper, The Right Hon. H. U. Willink, QC, and Mr. W. J. Worboys. The Secretary reported that Mr. John Newsom. Education Officer for Hertfordshire, had accepted the council's nomination for election as an Honorary Associate.

Appointments

(a) *RIBA Architecture Bronze Medal: RIBA Representatives to serve on Juries to consider an Award*: (i) In the area of the Berks, Bucks and Oxon Architectural Association—Mr. Paul Mauger (F), President of the Essex, Cambridge and Hertfordshire Society of Architects; (ii) in the area of the West Yorkshire Society of Architects —Mr. J. Lewis Womersley (F).

(b) *London University Architectural Education Committee: RIBA Representatives*: Mr. D. L. Bridgwater (F) and Mr. Hubert Lidbetter (F) re-appointed for year beginning March 1, 1957.

(c) *RIBA Representative on BSI Committee BMB/1—Bituminous Roofing Felt and Damp Proof Courses*: Mr. C. M. Cuthill (A).

(d) *RIBA Representatives on Ministry of Works Building and Civil Engineering Regional Joint Committees for three-year period beginning February* 1, 1957: Region No. 1 Northern (Newcastle), Mr. J. H. Napper (F), re-appointed; No. 2 East & West Riding (Leeds), Mr. Noel Pyman (F), re-appointed; No. 3 North Midland (Nottingham), Mr. J. Gordon Woollatt, DFC (F), in place of Mr. C. F. W. Haseldine (F); No. 4 Eastern (Cambridge), Professor J. Leslie Martin (F), in place of Mr. Peter Bicknell (F); No. 5 London, Mr. Richard Sheppard (F), re-appointed; No. 6 Southern (Reading), Mr. A. B. Waters, MBE, GM (F), re-appointed; No. 7 South Western (Bristol), Mr. T. W. Snailum (F), in place of Mr. J. Ralph Edwards (F); No. 8 Wales (Cardiff), Mr. Norman Thomas (A), in place of Mr. John Bishop (A); No. 9 Midland (Birmingham), Mr. S. Lunn Whitehouse (L), re-appointed; No. 10 North-western (Manchester), Mr. H. M. Fairhurst (A), re-appointed; No. 12 South-eastern (Tunbridge Wells), Mr. R. Duncan Scott (F), in place of Mr. H. Edgar Bunce (F).

(e) *Rotherham Technical College: RIBA Representative on Building Advisory Committee*: Mr. A. D. P. Jenkinson (A) in place of Professor Stephen Welsh (F).

(f) *Southern Regional Council for Further Education: RIBA Representative on Advisory Committee for Building*: Mr. R. W. Cave (F), re-appointed.

Christmas Holiday Lectures for Young People.—The President referred to the Christmas Holiday Lectures given by Mr. G. Grenfell Baines (A) which had been attended by large audiences of young people who had shown their keen interest. On his proposition a hearty vote of thanks was passed in favour of Mr. Grenfell Baines.

Completion of RIBA Building.—The council, after considering approximate estimates submitted by the architect, confirmed their previous decision in principle to complete the two top storeys of No. 66 Portland-place and gave authority for the contract to be placed.

Petrol Rationing.—The council continued their consideration of the problems with which both the industry and the profession are faced owing to petrol rationing. It was reported that the Minister of Works had set up a special committee on which the RIBA was represented to present the case for the building industry and profession. Three meetings of that committee had been held up to date and a comprehensive review of the difficulties of the building industry had been presented. With regard to petrol allocations for professional purposes, it had been conceded that supplementary petrol up to the maximum of 200 plus 100 miles per month would be issued for home-to-work in the case of architects who could show need and who had not already obtained the supplementary ration.

The Ministry of Fuel and Power had also agreed that some consideration of the claims of professional men who could show genuine and extreme hardship, coupled with such interference in the progress of building projects as to affect the national economy, would be given within a matter of some six to eight weeks. It was, however, reiterated that no substantial increase in petrol allocations, either individually or to the profession as a whole, could be envisaged.

BIRMINGHAM AND FIVE COUNTIES ARCHITECTS

Municipal Shopping Schemes Criticised

IT WAS a cardinal error of planning and design to adapt the shopping to form a subsidiary unit of construction in flats and maisonettes, MR. KENNETH LEWIS, architect to Birmingham Co-operative Society, told members of the Birmingham and Five Counties Architectural Society. Some aspects of municipal shopping in many cities, including Birmingham, left a lot of room for criticism, he contended.

'It must be recognised that shops are in themselves of as much importance as the housing community of which they form part,' Mr. Lewis continued. 'Surely it is not impossible to formulate an architectural plan in our new suburban developments which satisfies the two aspects of living space.'

Mr. Lewis, who was giving a paper on 'Shops and Stores,' illustrated his talk with slides showing new shop and business premises in Holland, Germany, the United States and this country.

THE INSTITUTE OF BUILDERS

Lecture on 'Science and Management'

ABOUT 220 members and guests attended a lecture arranged by the Institute of Builders, on 'Science and Management,' by DR. ALEXANDER KING, CBE, held in the King George's Hall, WC1, on January 16. Mr. H. S. Oddie, FIOB, President, who was in the chair introduced Dr. King as having been, until recently, Chief Scientific Officer of the Department of Scientific and Industrial Research.

Events which were taking place in Europe at the moment (said Dr. King), in connection with a common market and a free trade zone would, if agreement were reached, alter our economic situation. 'If the six countries, the so-called Benelux countries in Europe with those great countries of France, Germany and Italy, form a country without tariff barriers, with a common tariff barrier to the rest of the world, and if we in our wisdom or the lack of same, because it is not for me to judge, decide to join that free trade zone—which will, apart from food and certain other commodities, have no tariff barriers, with the six major European countries, but maintaining our own differential tariffs with the rest of the world, which enables us to maintain Imperial Preference and the like—if we do join in this, and even if we do not, if the six go ahead themselves, the situation for our economy and our manufacturing economy inevitably will change very considerably.

'We might well see then in the next 10 years a European community with which we are associated, not necessarily completely and not necessarily politically, but at any rate economically, which represents a market of 250 million people, nearly twice that of the United States, where free competition will prevail, where we shall have to face and compete with the ingenuity and the hard work of Germany, the precision engineering of the Swiss, the Northern Italians and many other friendly but rival nations. This is not only a problem; it is a challenge. Goodness knows, we would have been in a great deal worse position than we are today if a very large proportion of our progressive industries had not found great new markets. It represents a change of an importance such as we have not met or faced since the outbreak of war in 1939.

Demands of a Changing Industry

'This in a changing industry demands essentially two things. It demands efficiency on the part of the industry itself, which means efficiency in management first of all, and, secondly, it means enterprise, enterprise not merely in doing the existing things well, but in being a step ahead of the others, in seizing our opportunities, in the capitalising of our inventions, in the capitalising of our scientific discoveries, and all the advantages of our rich resources of human nature and skills which we possess in this country. I do not think it is a situation in which we need feel at all downhearted, but equally

it is one which admits of no complacency.

'Efficiency, of course, is essentially this problem of which we are all sick, under the name of "productivity." Productivity, of course, as a measure of our efficiency, is a very, very important thing and a very complicated matter. It is very difficult to measure in a real sense. One can measure productivity in terms of output on the price of labour, or fuel utilisation, or machine utilisation, or material utilisation, and in many other ways. In different circumstances, and from year to year, the important factor may be efficiency; it may be labour development; it may be fuel and power development; it may be material development. At any rate we have not got to the bottom of the productivity problem. We know it is greatly complex as to cause and effect where managerial skill, managerial confidence and initiative are very important. Worker acceptance of new ideas, fiscal policy on a national basis, and technological change, and many other things are all part of it, but in the long run, over a decade or two, the most important controlling factor in increasing productivity is the rate at which we can increase technology and new technical ideas in industry. In an industry such as the rolling of steel plate or in many of our big industries fast becoming mechanised, by good management, by improving management and labour relations, by work study and so forth, we can increase the efficiency of a particular firm year by year by perhaps 4 or 5 per cent. if we do well; but a single major invention in mechanisation may come in by which the work of every employee there (and productivity is based on output per man hour) may go up by 200 per cent. That, of course, calls for very great capital intake, and creates very many problems for management.'

Management Training

Discussing the question of management training and study in this new world into which we were being thrust or which was thrusting itself on to us (continued Dr. King), the requirements for management and, he thought, study, would be very different from those in the past. There was a great deal of interest at the moment in this country in the question of our management training at university level. Important as that was, industry would have to find its best brains, its best people, from university-educated individuals more and more as the new university and other educational means picked up the cream, and a very much larger proportion of the cream passed through the universities. 'The important point here is what should happen to those people when they are at university. Are we, in fact, apart from the specialist training as that of a doctor or engineer, providing a type of education which is preparing people so that they will be flexible when they get into industry and commerce, developing themselves to the maximum extent in their own and the firm's and the country's interest? Personally, I doubt it,' added the lecturer.

There was a great deal of disagreement still whether management was something which could be taught. The problem which raised itself in one's mind immediately was this: Are managers born, or are they made? Presumably, the final answer was 'Both.' They were born and made. No one expected that a person who had a flair for some other type of activity should be sent out into the world untrained. No one felt very attracted by the thought that a doctor, although he may have an enormous sense of a vocation for medicine, should be sent out without training. 'I think mainly doctors may be born, but now we also want them made,' continued Dr. King. 'The same is also true of the scientific research man, the architect, and all kinds of people. It is probably, in the long run, true of management. Leadership may be something in which one can be trained. Both basic education and vocational training can do something to make people better than their native gifts untrained would be. That is in no way to disparage the man who has lifted himself by his own shoe straps, and has made his way by his own effort and personal ability. But training would do him no harm; it may do him a great deal of good.'

American Training Beliefs

In America and in other countries there was still complete disagreement about what that training should be. In the American schools, many of which were being copied very freely (and, perhaps, a little too freely) in Europe, there were two essentially different methods. There was the classical one, the Harvard Business School method, which was based really on the legal case history concept, namely, that you should train on a common law basis. By looking at the experience of other people in certain situations in business and manufacture, by discussion with the people who taught those cases (most of whom had, in fact, been the individual who had observed the situation and gathered in the material), by cross questioning, and by participating in various ways you gradually got in your mind a great mass of experience which, in fact, enabled you to face up to industrial problems yourself, problems of organisation, personnel and all the rest.

However, there were many people in the United States, and among them some of the most progressive business people, especially those in the newer industries, and especially those in the great technological universities, who said that that approach, while very good at Harvard and at places where the case material was left to the teachers who had been in industry and gathered the material themselves, and had a feel for it and knew its quality, when you got down to the third or fourth rate college where this material was taught from text books by people who probably were not good enough to make a success in industry and who gradually drifted to teaching, well, it was not very attractive; and in any case the common law approach made a man, unless he was of the top flight intellectually, once he got into his business career, always grope back in his mind to examples which he had been taught and which might have some relevance to the situation in hand. Therefore, the other school of thought, which (thought the lecturer) was beginning to dominate, took the opposite point of view; and this was taught at places like the MIT and Carnegie; and it was gradually pervading many of the other places like Colombo University. The attitude there was: 'Teach a man to think, to think in an environment approximately like that in which he is likely to find himself later. Teach him how decisions are made. Teach him the way to put facts. Teach him the operational research approach. Teach him to get the sense of what is significant and what is not significant. Teach him the background subjects.' Thus you would produce a man who did not think he knew all about industry, although he had never been in it, but a man who was capable of thinking, who knew that he did not know all the answers, but one who would pick up the techniques and who at any rate would be intelligent on the job.

'The case is not yet proved,' said Dr. King, 'but to my mind I would say that the second approach represents the growth of management as a subject, or a group of subjects, in very much the way that engineering grew or medicine grew about 100 years ago.'

In concluding, Dr. King said: 'I sincerely hope that in facing up to the new situations in this country which I have mentioned your own industry and your own organisations will, in fact, take this problem of management training very seriously; and, in particular, if you can bridge the gap between management and the new technical ideas, I think you will have done a very great service to your industry.'

A discussion followed, after which the lecturer was thanked on the proposition of Mr. Leslie Wallis.

OBITUARY

Arthur Charles Manuel

WE REGRET to announce the death of Mr. Arthur Manuel, OBE, ARIBA, ARICS, who died on January 1, aged 49.

Mr. Manuel served his articles in Bournemouth, and for over 21 years was on the Chief Architect's staff of the Ministry of Works, London. He was engaged on many programmes during his career, serving for a time as Assistant Regional Director, Cambridge, and since 1952 as Assistant Chief Architect. He was directly responsible for buildings and services for Royal Ordnance Factories, Research and Development buildings for many Experimental Establishments, Aeronautics, Guided Weapons, and the large scale schemes for the Atomic Energy Authority, Windscale, Calder Hall, Harwell and Aldermaston.

A colleague writes:

Manuel was energetic and enthusiastic about all things in which he took an interest; his profession was his pride, a modernist in outlook but unwilling to accept contemporary stylisms. He was endowed with common sense, an extreme practical approach to all architectural problems and was conscientious about everything he undertook. He will be greatly missed by his friends and colleagues in the Department and the architectural profession.

Private Secretary

Mr. Henry Brooke, Minister of Housing and Local Government and Minister for Welsh Affairs, has appointed Mr. Alun Sylvester-Evans to be his principal private secretary, and Mr. W. R. Cox to be his assistant private secretary.

Law Course

A course on industrial and factory law will be held under the auspices of the Industrial Welfare Society on February 5-7 at Robert Hyde House, 48, Bryanston-square, W1. Mr. Harry Samuels, MA, will be the lecturer. The course covers the legal groundwork necessary to industrial managers and executives. Particulars of the course can be obtained from the secretary.

Solid Fuel Exhibition

'The Scientist at Your Hearth' is the title of an exhibition to be held by the Solid Smokeless Fuels Federation at Charing Cross Underground Station from February 4-23. It will feature an actual laboratory in which will be seen the testing of natural and manufactured solid smokeless fuels to ensure their quality and suitability for home heating, and also the testing of modern appliances to ensure maximum efficiency.

JCB

The most powerful Hydraulic

FACE SHOVEL

in Great Britain

NOTE:
Using the J.C.B. range of Excavator Buckets the machine becomes a back-acting digger. Changeover time 5 minutes.

IT DIGS
IT SHOVELS
IT LOADS

A JCB SERVICE BACKED PRODUCT

The new Face Shovel Excavator has all the advantages of our famous versatile digger . . .

(a) An uninterrupted slew through 180°.
(b) A reach of 16′ (4.87 m.).
(c) A loading height of 10′ 6″ (3.2 m.).
(d) Tearaway force 4,100 lbs.

Plus tractor-mounted manœuvrability and speed of movement. You will be amazed at its great power in action and its speed . . .

7 CUBIC FEET (O.198 cu. m.) RAISED AND TIPPED IN 30 SECONDS.

★ *LET US DEMONSTRATE FOR YOU*

FOR FULL DETAILS WRITE TO

J. C. BAMFORD (EXCAVATORS) LTD

LAKESIDE WORKS · ROCESTER · UTTOXETER · STAFFS · ENG

Telephone Rocester 371

NO CONNECTION WITH ANY OTHER FIRM OF THE SAME NAME

FALKUS
BROS. LTD.

BUILDING CONTRACTORS

CRAFTSMANSHIP
THROUGH APPRENTICESHIP
is our watchword and to do things finely and thoroughly is our endeavour.

The FALKUS ORGANISATION
has achieved in no small degree the satisfaction which derives from good workmanship and a worthy Clientele gives hearty assent.

46 · BISHOPSGATE · E.C.2

Telephones:

London Wall 1876 Bishopsgate 3381-4 (4 lines)

Telegrams:

"Falbrowok, Spimark, London"

Central Heating and Air Pollution

MANCHESTER'S DECISION TO USE GAS OR ELECTRICITY IN PUBLIC BUILDINGS

MANCHESTER CORPORATION has decided to approve a report by its General and Parliamentary Committee to accept in principle, in the interests of purer air, the policy of installing in new public buildings central heating systems operated by the use of town gas or electricity and to extend the same principle to the replacement of installations in existing public buildings. Their decision does not at present extend to housing. The objection to the use of solid fuels and fuel oil is the large quantities of sulphur dioxide that these fuels pour into the atmosphere when they are burnt. Following is the text of the report:

While scientific evidence about the effects of air pollution on human health is incomplete, the Beaver Committee stated that enough was known to make it abundantly clear that it is injurious to both physical and mental health: it fosters disease and can cause death. The Beaver Committee went on to say that there could be no doubt that the effect of air pollution on health is wholly bad whether measured positively in relation to growth, wellbeing and the joy of living, or more negatively in terms of death, disease and the economic loss which goes with incapacity to work.

In the view of the Beaver Committee the most serious immediate problem to be tackled is visible pollution by smoke, grit and dust, but they also stated that when coal, coke, anthracite and fuel-oils are burned, whether in industrial or domestic premises, the principal gaseous products entering the chimney are carbon dioxide, nitrogen and excess air, water vapour and sulphur dioxide, and that sulphur dioxide is generally regarded as the most serious of the gaseous pollutants, and indeed one of the most harmful of all the polluting agents.

Coal and coke commonly contain between one per cent. and two per cent. of sulphur and the Beaver Committee have stated that the position is likely to get worse since the average sulphur content of coals mined in Britain is steadily rising. Fuel-oil contains between three per cent. and four per cent. of sulphur.

Moreover, while pointing out that every industrial and domestic installation which burns fuel other than town gas, purified coke oven gas, or coke in blast furnaces, sends into the atmosphere its quota, great or small, of this invisible but harmful gas, and that the heaviest concentrations of sulphur were produced by large fuel burning installations, the Beaver Committee stated that no known methods exist whereby the greater part of the sulphur from industrial and domestic chimneys could be prevented from being poured into the atmosphere other than by the increasing use of town gas, a virtually sulphur free fuel, and—when the sulphur problems at power stations have been solved—by the use of electricity.

In the case, therefore, of large fuel burning installations which do not use town gas or electricity, provision must be made not only for the elimination of smoke, but also for the dispersal of sulphur dioxide, and it is for this reason that it becomes necessary to erect high chimneys.

In this respect the Council will recall, the report continues, that recently the Manchester Regional Hospital Board submitted to the Corporation a proposal for a new heating installation at the Christie Hospital. The new installation would be a coal firing boiler plant, and the Council's approval was sought to the erection of a chimney about 96 ft. in height. The Board contended that, if operated efficiently, the new plant would be substantially smokeless, but they agreed that a high chimney was necessary to disperse the sulphur dioxide resulting from the combustion of the coal. The town planning and buildings committee however, objected to the erection of the proposed chimney on the grounds of amenity and the Council agreed with them.

The consumption of coal at the proposed new plant of the Christie Hospital was estimated by the Regional Hospital Board to be about 2,250 tons a year, and in order to give the Council some idea of the quantity of sulphur dioxide which would be emitted from such a plant, the Medical Officer of Health has prepared the following table which shows the quantity of sulphur dioxide which would be emitted on the assumption that 2,250 tons of coal a year or its equivalent in other fuels were consumed: —

Fuel	Average Sulphur content	Sulphur Dioxide emissions per ton		Estimated Sulphur Dioxide emissions per annum based on a consumption of 2,250 tons of Coal or its equivalent in liquid fuel	
	per cent.	lbs.	cu. ft.	tons	cu. ft.
Coal Tar Fuel (Creosote Pitch) ...	0.7	31.36	181	23.45	303,247
Bituminous Coal	1.5	67.2	388	67.5	873,936
Petroleum Fuel Oil	3.0	134.4	776	87.6	1,134,951
Petroleum Fuel Oil (Heavy) ...	3.5	156.8	906	107.4	1,390,529
Coke	1.5	67.2	388	67.5	873,936

We are gravely concerned about the effects of sulphur pollution and in our view it is desirable that wherever possible central heating installations should use town gas or electricity because if that were done the following objects would be achieved:—

(i) the elimination of smoke;
(ii) the elimination of sulphur dioxide; and
(iii) the need to build or maintain large chimneys would be obviated.

We have, therefore, considered whether or not it is desirable that the Council should, in central heating installations in large public buildings for which they are responsible, adopt the policy of using town gas or electricity, and in an endeavour to assess the financial effect of adopting that policy we submit a table (reproduced on next page) which shows the major buildings likely to be built by the Council in the next few years in which new central heating installations will be installed. The table shows the comparative capital costs and also the running and maintenance costs in relation to different kinds of fuel and it will be seen that the use of town gas or electricity will usually cost between 50 per cent. and 100 per cent. more than fuel oil or solid smokeless fuel.

The point at issue is whether or not, having regard to all the relevant considerations the Council should commit themselves to the principle that on the broad considerations of public policy it is desirable to incur some additional expense for the purpose of attaining all the objects to which we have referred.

The question must obviously be considered against the background of the public interest which in this respect relates to both health and amenity, and we do not need to remind the Council that the safeguarding of health and the preservation of amenity are objects which are not only desirable in themselves but they are objects which local authorities should use every endeavour to achieve.

Accordingly, after full and careful consideration we recommend that the Council should accept, in principle, the policy of installing in new public buildings, under their control, central heating systems operated by the use of town gas or electricity and to extend the same principle to the replacement of installations in existing public buildings. We should perhaps make it clear that this recommendation does not relate to houses or flats: while the Beaver Committee recognised that gas and electricity are, from the angle of atmospheric pollution, ideal domestic fuel, the special problems and considerations which arise compel us to refrain from including domestic buildings in our recommendation. Nevertheless, we have no doubt that the question will be considered on its merits when specific housing schemes are prepared.

We now wish to refer to an incidental matter to which our attention has been drawn. The Education Committee have recently submitted to the finance committee proposals for converting the central heating boilers at ten schools from gas to oil firing. The proposals have been made by the education committee in response to an approach by the Ministry of Education who have urged local education authorities to take energetic steps to secure substantial savings in fuel costs and have pointed out that savings could be incurred by the conversion of

CENTRAL HEATING INSTALLATIONS IN PROPOSED CORPORATION BUILDINGS.

ESTIMATES OF CAPITAL COSTS AND ANNUAL RUNNING AND MAINTENANCE COSTS FOR VARIOUS FUELS

Building	Estimated Capital Costs in £					Estimated Annual Running and Maintenance Costs in £				
	Coal	Coke	Fuel Oil	Gas	Electricity	Coal	Coke	Fuel Oil	Gas	Electricity
	£	£	£	£	£	£	£	£	£	£
Courts of Law	68,200	68,500	67,900	67,000	58,500	6,000	6,800	5,400	9,300	6,800
Ringway Airport—New Terminal Buildings...	117,500	118,000	117,000	116,000	91,000	10,550	12,650	11,050	22,150	14,700
Offices, 77, Princess Street	14,040	14,240	14,230	13,800	9,000	1,045	1,300	1,245	2,830	1,300
Kirkmanshulme Lane Grammar School ...	20,900	21,050	20,300	19,900	22,860	1,310	1,830	1,880	4,340	3,920
Wythenshawe College for Further Education	24,500	24,700	24,200	23,650	26,660	1,460	1,740	1,550	3,100	4,940
Openshaw College for Further Education ...	30,300	30,500	29,900	29,200	32,000	1,825	2,180	1,940	3,930	5,600
Irwell College for Further Education ...	12,110	11,900	12,250	11,515	20,310	1,040	1,260	1,100	2,250	5,600
Didsbury Training College	20,300	20,520	19,320	18,900	25,510	4,010	5,390	5,050	11,760	8,870
Domestic Trades College	49,500	50,000	49,100	47,500	45,360	3,400	3,900	3,700	7,300	5,600
North Manchester Girls' High School ...	11,280	11,430	11,130	10,800	16,290	960	1,140	1,000	2,270	3,920
New Head Offices, Transport, Hyde Road ...	20,060	20,360	20,350	19,700	12,200	2,614	3,250	3,113	7,090	3,250
Sharston Secondary School	11,310	11,390	11,210	11,010	13,360	750	930	830	1,890	2,100
Public Hall, Wythenshawe	15,500	15,700	15,600	15,300	10,450	2,500	3,150	3,000	7,000	3,250
Holt Town Cleansing Depot	16,430	16,630	16,870	16,070	11,320	1,790	2,440	2,335	5,300	2,515

NOTE.—These estimates relate only to the new major buildings to be undertaken by the Corporation in the next few years ; they do not relate to existing public buildings in which heating installations are likely to need replacing.

central heating installations from gas firing to oil firing. While it is true that the Beaver Committee have suggested that in order to release or conserve coke for domestic use, it may be desirable to convert those central heating installations which burn solid smokeless fuel into oil firing installations, nowhere do they suggest that gas installations should be converted to oil firing. In view of the fact that fuel oil discharges into the air about twice as much sulphur dioxide as coal and coke, we think that it would be a retrograde step to convert to fuel oil those central heating installations which at present use town gas, which is virtually free from sulphur dioxide.

IN PARLIAMENT

From Our Own Correspondent

HAVING set opportunity for the nation as the keynote of his policy, Mr. Harold Macmillan was warmly welcomed by the House of Commons on Tuesday last, when he led for the first time before Parliament those he had chosen to assist him in achieving his aims.

The unknown factor in all the political upheaval of the last few weeks is the reaction of the Opposition to the change in leadership and to Mr. Macmillan's plea for national unity, particularly as their insistent demand for an immediate election has been rejected. It is not very long ago that Mr. Gaitskell in a political broadcast was proffering the olive branch to the Government, if Sir Anthony Eden no longer retained control of affairs. Now that Sir Anthony has gone it will be interesting to see if this promise will be redeemed, but whether it is or not Mr. Macmillan, who thrives on political opportunity, will lose little time in recalling it to the mind of Parliament.

But with or without the support of the Opposition, it has already become obvious that Mr. Macmillan means business, and he has surrounded himself with a team of Ministers which will enable him to translate aspirations into action. He completed the final stages of his reshuffle a few days before Parliament reassembled, thus enabling new departmental heads to get acquainted with their responsibilities before having to justify them in Parliament.

There has been a complete changeover at the Ministry of Housing and Local Government. Mr. Enoch Powell, who was Parliamentary Secretary to Mr. Sandys for a year, succeeds Mr. Henry Brooke, the new Minister, as Financial Secretary to the Treasury. Mr. Bevins, who had been Parliamentary Secretary to the Minister of Works since 1952, replaces Mr. Powell. He has already had experience of the department, having been for some time Parliamentary private secretary to Mr. Macmillan when he was Minister.

Housing Reappraisal Possible

The transfer of a Treasury Minister to the sphere of housing and local government and replacing him at the Treasury with a junior Minister who has been concerned solely with those two aspects of Government policy could lead to a reappraisal of that policy. Whether the interchange will result in such a change only the future will tell, but at least Mr. Brooke will have a chance of scrutinising at close quarters the effects on building of those monetary measures which he spent so much time defending in the House.

Both Mr. Brooke and Mr. Bevins are in for a busy time. Three days a week they will be dealing with the Rent Bill in an effort to get it through committee before Easter. Progress so far has been good, but not rapid, and at the last sitting before Christmas, Mr. Sandys, then in charge, moved that the committee should sit an extra day in order to expedite progress. This move was opposed by many members, both Conservative, who want the Bill to operate as soon as possible, and Labour, who do not.

Intensity of Feeling

Mr. Sandys had his way, and the new Minister will have to bear the burden. Already he has been made aware of the intensity of feeling among his own supporters, in addition to that which was indicated to his predecessor, and last week, Mr. Henry Price, together with three other Conservative members for London constituencies, saw him about the offensive clause 9. It is believed that while he may grant some concession here, it will not be for the three-year period. The Prime Minister was not immune from criticism on this Bill, having to answer questions about its implications and operation the first day that the Commons returned.

The Ministry of Works was another department which underwent complete change. Mr. Hugh Molson, No. 2 to Mr. Harold Watkinson at the Ministry of Transport and Civil Aviation from 1953, succeeds Mr. Buchan-Hepburn as Minister, and will have as his Parliamentary Secretary Mr. Harmar Nicholls, who served in a similar capacity at the Ministry of Agriculture, Fisheries and Food. Mr. Nicholls was a forthright critic of the Labour Government's housing policy during Mr. Bevan's period of office, and once suggested an individualistic method of overcoming the housing difficulties.

The decision to vest in Mr. Maudling, as Paymaster-General, responsibility for answering on power questions in the Commons will provide MPs with a vigorous spokesman for the new Ministry. Mr. Maudling, however, will give them little change. In the past he has shown himself a formidable adversary in debate, skilled in argument and with marked readiness in repartee. One of the earliest announcements expected from him and the new Minister is a statement about the expansion of the nuclear power programme.

Nuclear Power

Some indication of the probable size of the expansion was provided by Lord Citrine, chairman of the Central Electricity Authority, when he inaugurated construction work on the new power station at Bradwell-on-Sea, in Essex, last week. His estimate was a doubling or trebling of the programme by the addition of only a few stations to the 12 which were originally proposed in the Government's White Paper in February, 1955.

It is understood that the number of additional stations required may be about half a dozen, and the total cost of the programme may be about £600m. or £700m. Lord Citrine did suggest that the capital costs would be many millions more than would be involved in building conventional stations of equal capacity, but thought that what would be lost on the capital swings would be gained on the operational roundabouts.

Construction of the nuclear power station at Berkeley in Gloucestershire is already well under way, but the completion of the expansion of the programme which is envisaged will require a great extension of building schedules. Much will depend on availability of materials, especially steel, but no doubt more will be heard of this when the Government's proposals are laid before Parliament.

A BIRMINGHAM INQUIRY

Minister Substitutes Clearance Order for Compulsory Purchase Order

A PUBLIC inquiry was held at Birmingham on October 9, 1956, before an Inspector appointed by the Minister of Housing and Local Government into an application by Birmingham Corporation for confirmation by the Minister of the Birmingham (Vittoria-street, St. Pauls) Housing Compulsory Purchase Order, 1956. The properties embraced by the Order comprised Nos. 13-21, Vittoria-street, Birmingham, and five houses at the rear of that street, all of which are owned by Decie Properties, Ltd. The site has an area of 620 sq. yds. and the houses are sub-standard. The site is industrially zoned in the Birmingham Development Plan, and it was stated in evidence that it was the intention of the Corporation to expend a sum of money in renovating the houses to give them an extended life of 20 to 25 years.

In presenting the company's objection to the confirmation of the Order, Mr. Frank Blennerhassett submitted that the Corporation had powers vested in them under Section 4 of the Housing Repairs and Rents Act, 1954, for the postponement of demolition under Clearance Orders in the case of houses let to local authorities, and that the Corporation should not purchase properties under compulsory powers in order to acquire land at a low figure for the purpose of their ultimate industrial programme.

The Minister has now informed the Town Clerk that while he is satisfied that the houses are unfit, he is not satisfied that acquisition is necessary to secure their clearance. He suggests, therefore, that the Corporation should seek agreement with the owners for the substitution of a Clearance Order in respect of these properties, in accordance with the provisions of Section 31 of the Housing Act, 1936.

VERMICULITE EXFOLIATORS

Association's Annual Meeting

AT THE annual general meeting of the Association of Vermiculite Exfoliators, Ltd., held on January 8, Mr. A. J. Connelly was re-elected chairman for the ensuing year and the executive committee established as follows:—Messrs. J. R. Bartlett (of J. M. & J. Bartlett, Ltd.), Newcastle-upon-Tyne; A. E. Cleaver (A. R. & W. Cleaver, Ltd.), Northampton; J. Warren Hitchins (Dupre Vermiculite (Exfoliators), Ltd.), Welwyn Garden City; W. H. N. Cooper (the Iron and Marble Co., Ltd.), Bristol; C. E. Bickerdike (William Kenyon & Sons (MetaMica), Ltd.), Dukinfield; L. L. Slack (L. Slack & Sons, Ltd.), Pontypridd.

In a review of the progress made in recent years, THE CHAIRMAN expressed the hope that exfoliators and consumers of vermiculite would continue to take full advantage of the facilities provided by the Association. The large increase in demand showed that vermiculite was now thoroughly established and its lightweight insulating properties well appreciated. At the same time, there was constant need for technical development and research and the Association was anxious to co-operate with all interested.

RENT BILL, 1956

Chartered Surveyors' Observations

1. The Royal Institution of Chartered Surveyors has examined the Rent Bill presented to Parliament on November 7, 1956. The following observations have been offered for consideration by the Minister of Housing and Local Government and the Secretary of State for Scotland.

Revision of Rent Limits in England and Wales

2. The Institution has previously addressed the Minister on the need for revising rents in order to enable premises to be kept in a good state of repair. Fit housing accommodation is a vital national asset, but its preservation depends upon proper maintenance. For too long, rent control in its present form has resulted in disrepair, prevention of necessary improvements, and premature obsolescence. Legislation on the lines of the present bill is essential if this state of affairs is to be remedied.

3. The Institution has examined the formula for fixing the new limits of controlled rents, and considers it to be a workable arrangement. The formula appears to provide a reasonable difference between rents, according to whether the landlord or the tenant (or partly one and partly the other) is responsible for repairing the premises. It is to be hoped that the increases in rent permitted by the bill will have the desired effect of encouraging landlords to put and keep their properties in repair.

4. An increase in future rents ought to enable current repairs to be done as they become necessary, but one very important problem is the accumulation of repairs which must be done now. The bill takes some account (in Part II of the First Schedule) of the fact that time may be required to carry out these repairs, but lack of funds may delay action for longer than is desirable. It is therefore hoped that the Minister, following the precedent of his earlier Circular 42/54, will do all he can to encourage local authorities to use their powers of lending money to owners for the purpose of carrying out repairs; and that this assistance will not be limited to structural repairs, as the circular appears to contemplate. The legislative provisions which enable this to be done should be given further publicity, and in particular should be mentioned in notes appended to certificates of disrepair issued by local authorities under the provisions of the bill. Local authorities, in turn, should be more willing to make loans than they sometimes are.

5. Clause 2(2)(c)(i) of the bill provides that the new rent limits shall not apply to any dwelling within a clearance area under the Housing Act, 1936. The Institution does not dissent from the principle that dwellings which are unfit for human habitation shall not be given any increase, but it would appear that this object would be achieved by the other provisions of the bill relating to disrepair. Nevertheless if it be thought preferable, for administrative convenience, to make the special exclusion of clause 2(2)(c)(i), care should be taken to limit its effect to dwellings which are in fact unfit. Clearance proposals can apply to:—

(a) dwellings which are in themselves unfit for human habitation;

(b) dwellings which are dangerous to health only because of bad arrangement of the street or like causes, and not because the dwellings themselves are unfit;

(c) dwellings on land surrounded by a clearance area or adjacent to it, which must be cleared to facilitate redevelopment.

Dwellings in category (c) do not form part of the clearance area, and it is presumed that they fall outside the scope of clause 2(2)(c)(i). It should be made clear that fit dwellings in category (b) are also outside its scope, and that only those unfit dwellings in category (a) are precluded from the rent increases. This would follow the different bases on which compensation is payable on compulsory acquisition under the Act of 1936.

6. It is further submitted that the declaration of the clearance area is not in itself an appropriate time to operate clause 2(2)(c)(i), since the classification of dwellings as fit or unfit is often altered by the Minister at the subsequent stage when he considers the local authority's application to approve a clearance order or a compulsory purchase order. As the bill now stands an owner of a dwelling which is initially classified as unfit may have to forgo additional rent for a long period before the dwelling is reclassified as having been in the fit class at all times. The confirmation of the appropriate order should be the time at which clause 2(2)(c)(i) applies. If a dwelling is in fact unfit the tenant will in the meanwhile be able to invoke part II of the first schedule.

7. The second part of clause 2(2)(c)(i) provides that the new rent limits shall not apply if the dwelling 'is or forms part of premises with respect to which a . . . closing order has been made' under the Housing Act, 1936. The institution again accepts the principle that any part of premises which is actually unfit and made the subject of a closing order shall not qualify for a rent increase. But it should be made clear that parts of premises which are not unfit, and are outside the effect of a closing order which applies to another part of the same premises, will not fall within this exclusion.

First Schedule

8. Four practical points arise on the first schedule. The first concerns the calculation of the appropriate factor

under paragraph 1(3) of the schedule, where the tenant is responsible for some, but not all, of the repairs; for which purpose in default of agreement, the county court will make a determination. In some cases, the court will already have made a determination under the corresponding provisions of section 23(5) of the Housing Repairs and Rents Act, 1954; and it would seem desirable to provide for the same determination to apply for the purposes of clause 1(3) of the bill, without further recourse to the court.

9. The second point is the intended relationship between paragraph 2 of the first schedule and section 30(3) of the Housing Repairs and Rents Act, 1954, which is now to be repealed. The practical effect of that sub-section was to enable a landlord, in certain circumstances, to 'elect' not to be responsible for internal decorative repairs of the dwelling; the election being exercised by a notice in the form prescribed for that purpose. Paragraph 2 of the first schedule to the bill similarly enables a landlord, in the circumstances therein specified, to elect whether he will be responsible for internal decorative repairs. Since 'an election under this paragraph shall be made by notice in the prescribed form,' it seems to be intended that notices under section 30(3) of the 1954 Act shall not have effect for the purposes of the bill, but it should be made clear whether this is so.

10. The third point on the schedule arises on paragraph 7(4). The earlier provisions of the paragraph are designed to enable a tenant, who has obtained a certificate of disrepair, to claim an abatement of rent to the extent therein specified. Up to the time of obtaining the certificate he will normally have paid an increased rent, notwithstanding the alleged state of disrepair. The intention of paragraph 7(4) appears to be to enable the tenant, after he has obtained the certificate, to claim a repayment in respect of the period between applying for the certificate and the granting of it, and to recover this sum by periodical repayments equal in amount to the rebate in rent which he is entitled to claim whilst the certificate is in force. If this is the intention, it is not very clearly expressed, and the sub-paragraph should be redrafted.

11. The final point arises on paragraph 11(1) wherein it is stated which defects may be specified in a certificate of disrepair, and these may include defects in the state of internal decorative repair, only if the landlord is expressly responsible under the terms of the tenancy or has elected to be so treated. In exercise of its powers under paragraph 11(2), however, a local authority may specify some defect of internal decorative repair for which the landlord is neither responsible nor deemed to be responsible (e.g., if the tenant wrongly alleged in his application for a certificate that the landlord is responsible). It is presumed that the county court would be able to cancel the certificate as respects any such defect wrongly specified. But paragraph 4(3) of the schedule, which sets out the court's powers, refers only to any defect which 'is one for which the tenant is responsible,' and this might not apply to a defect wrongly specified under paragraph 11(2). It may be that paragraph 4(4) deals with this point, but, if not, there ought to be a further sub-paragraph to paragraph 11 to cover it.

Increase of Rents in Scotland

12. The scheme for rent increases in Scotland, as provided in clauses 6 to 8 differs materially from that for England and Wales. In the latter case the scheme provides a uniform basis for calculating new rent limits and supersedes the provisions of the Housing Repairs and Rents Act, 1954. In Scotland, however, it is proposed that there shall be two bases upon which increases may be calculated, differing according to whether or not the landlord can fulfil the requirements of the Housing (Repairs and Rents) (Scotland), Act, 1954, relating to past expenditure.

13. The Institution appreciates that until the completion of the revaluation to be carried out under the Valuation and Rating (Scotland) Act, 1956, it will not be possible to reproduce in Scotland a scheme for the fixing of rent limits similar to that now proposed for England and Wales. For this reason some form of *interim* procedure is recognised to be necessary. The Institution submits, however, that the increase of 25 per cent. on the pre-1954 Act rent proposed in clause 6 is totally inadequate to secure the fundamental object of the bill which is to ensure that houses will be put and kept in a reasonable state of repair.

14. Serious anomalies have developed as a result of the various increases since 1914 in owners' rates, which have to be met out of controlled rents; and it is the opinion of the institution that, having regard also to the greatly inflated cost of repairs over the 1914 level, the *minimum* increase of rent necessary to enable houses to be preserved from further deteriorating is 50 per cent. over the pre-1954 level. The position can best be illustrated by the following examples which refer to typical properties in Edinburgh and Glasgow respectively:

	Edinburgh	Glasgow
	£ s. d.	£ s. d.
Position in 1914		
1914 rent	25 0 0	25 0 0
Owners' rates (1914) ...	2 7 5	3 8 9
Net rent (1914)	22 12 7	21 11 3
Position under Clause 6		
1914 rent	25 0 0	25 0 0
1920 increase (Ed. 43%; G. 47½%)	10 15 0	11 17 6
1956 rent (excluding any 1954 addition) ...	35 15 0	36 17 6
25% addition (Clause 6)...	8 18 9	9 4 10
Gross Rent (Clause 6) ...	44 13 9	46 2 4
1956 owners' rates ...	9 9 0	17 8 5
Net rent (Clause 6) ...	35 4 9	28 13 11
Position under alternative proposal (*c.f.* Clause 8) *Net rent* (if flat increase of 50%)	44 3 6	37 18 9

15. It is realised that under the terms of clause 8 landlords who have secured a 1954 Act increase of 40 per cent. on the controlled rent will be able to increase this by a further 10 per cent. Experience has shown, however, that in the great majority of cases landlords have not been able to take advantage of the provisions of this Act because of the onerous qualifying requirements, and the risk that if certificates of disrepair are granted, the rents will immediately be reduced not only to the 1914 level but to the 1914 rent *less* owners' rates at the current poundage. There is the added difficulty that, as in England and Wales, the necessary capital is not available to finance the qualifying repairs. Moreover, if a certificate of disrepair is granted, insufficient rent is available to rectify the defects specified in the certificate. These anomalies are partly met, so far as England and Wales are concerned, by the first schedule to the bill, to which reference has already been made; by this schedule a local authority is empowered to exercise discretion in regard to 'whether the defects ought reasonably to be remedied having due regard to the age, character and locality of the dwelling.' In other respects the procedure in this schedule is more realistic and workable than the 1954 Scottish Act.

16. Accordingly, the institution urges:

(a) that there should be a single scheme of increases for Scotland as in England and Wales and that the percentage increase on the pre-1954 controlled rent should be not less than 50 per cent.;

(b) that, as now proposed for England and Wales, this increase should be subject to the provisions prescribed in the first schedule of the bill and not to the conditions of Section 16(1) of the 1954 Act;

(c) that it be clearly understood that these provisions are to apply only during the interim period until the revaluation of property in Scotland has been completed under the valuation and Rating (Scotland) Act, 1956, and that, thereafter, a system for fixing rent limits similar to that now proposed for England and Wales will be adopted in Scotland, subject to such adjustments as are necessary to allow for the different bases of assessment.

Release of Dwellings from Control Under the Rent Acts

17. Clause 9 and the fourth schedule provide for the decontrol of certain dwelling-houses, including (Clause 9(1)) all dwelling-houses with a rateable value exceeding £40 in London, £30 elsewhere in England and Wales and £40 in Scotland. The fourth schedule ensures that there shall normally be a lapse of at least six months between the time when the Acts cease to apply to a particular dwelling-house and the time when any tenant of that dwelling-house can be required to give up possession or to pay an increased rent under a new letting.

18. According to the statistics published by the Minister (Cmnd. 17) this provision in clause 9(1) is likely to release from control about 750,000 dwellings in England and Wales and 60,000 dwellings in Scotland. It is submitted that six months is too short a time for this number of tenants to arrange their affairs. In very many of these cases, the tenants will be able to reach agreement

for a new lease of the premises; in others they will prefer to seek other accommodation. But in either event, a longer period will be necessary to allow a smooth transition.

19. Any extension of the period of six months does of course raise the difficulty that, until the decontrol becomes effective, the landlord is not entitled to any increased rent under clause 1 (or the corresponding Scottish provision). If the period is extended, account should be taken of that fact.

20. The solution which the institution suggests is that the period under paragraph 2(1) of the fourth schedule should be increased from six months to eighteen months. To meet the point just mentioned, however, it should be further provided that if, during that period of eighteen months, the landlord and the tenant should enter into a new lease of the premises for a period of not less than three years, the decontrol shall become effective on the commencement of that lease and the rent payable thereunder may be such as is agreed between them. This provides an incentive for both parties to reach agreement—the tenant because it will give him security of tenure (under the lease) for longer than eighteen months, and the landlord because if he does not reach agreement he must forego any increase in rent for the whole of the eighteen months. On the other hand, neither need make the agreement if he prefers to forego the advantages which it offers. An arrangement on these lines is essential, in the Institution's view, if considerable confusion is to be avoided at the end of the six months' period now specified in the fourth schedule.

21. If a new lease is not agreed as above, so that the tenant continues at the former rent, and that rent is inclusive of rates, it should be provided that the rent during the period of eighteen months can be increased by the amount of any increase in rates.

22. Clause 9(1) refers to the 'Metropolitan Police District.' It should be made clear whether this refers to the geographical area of the district as at present defined.

Requisitioned Houses

23. Provision was made in the Requisitioned Houses and Housing (Amendment) Act, 1955, to encourage the release from requisition of houses conferred by the Defence Regulations. Where an owner of such a house has accepted the former licensee as a statutory tenant in accordance with Section 4 of the Act, the Rent Bill makes provision for adjusting the total rent recoverable by the landlord. This provision does not appear to call for comment.

24. In a great many cases, however, houses will continue to be held compulsorily by local authorities until not later than March 31, 1960. Until the property is released the rent will continue to be the compensation rent determined under the Compensation (Defence) Act, 1939 (with subsequent adjustments in some cases). Where such a house was formerly subject to rent control, the compensation rent will continue to be the former controlled rent, and no provision is made in the present bill to have those rents adjusted. Increases corresponding to those in clause 1 (or the corresponding Scottish provisions) should be permitted as from the date the bill comes into force.

INQUIRY BUREAU

Smoking Fire Trouble

Q.—I am writing to you with regard to a problem I have concerning a new bungalow I have recently moved into. The problem is to stop smoke from pouring into the lounge when the fire is alight.

Although we get the smoke coming into the room directly we light the fire, we find it even worse on closing the door, which is situated directly opposite the fireplace. As you can imagine, the room gets full of smoke directly anyone leaves or enters the room and closes the door. The only time this does not happen is when we either leave the door open just a little or else have the window slightly open.

I have contacted my builder on this matter who informs me that this trouble is caused through lack of air in the room. He has tried, without success, having a cowl on the chimney and says that the only possible way to prevent all this smoke is to put either a ventilator on the wall or two domes at either side of the fireplace on the floor. I do not want this to be done without finding out if there is any other way out. Whilst on the subject I would like to point out that the chimney stack is built lower than the top of the roof. Could this be a possible reason for my problem ?

This matter has caused me quite a bit of worry and I would very much appreciate any help or advice you might be able to offer.

Incidentally, could you also inform me whether or not it is advisable to have an air brick in the bathroom or in bedrooms without a fireplace.

A. C. W.

A.—From the information given it would be unreasonable to give a positive answer for there may be several factors that are contributory to the trouble now being experienced.

The advice given by the builder regarding the inclusion of some form of ventilator into the room is sound and may well cure the trouble. It is not quite clear, however, if the trouble starts only when the door is opened and all windows are closed. If this is the case, then quite definitely the insertion of an air brick would ease, if not entirely eliminate, the smoke from being drawn down the chimney.

The fact that the chimney is built to terminate below the general level of the roof could be a source of trouble, but generally this would only affect the chimney functioning correctly when the wind is in a certain direction. Since no mention has been made of varying conditions due to change of direction of wind, it is imagined that this is not a source of trouble but it would be as well to check the possibility.

A further probable cause of the trouble is the throat of the chimney being too large. The builder should be able to advise on this. Often when the appliance has been fitted a large unnecessary space is left between it and the flue. This space, until the fire is well on the way, contains cold air all of which must be heated before the smoke and warm air will start to rise. Special fittings are now on the market, however, known as throat restrictors which when used in conjunction with the lintol of the fireplace opening, avoid this air space and have without doubt, when used, considerably increased the efficiency of the working of the fire appliance.

The Coal Utilisation Council would, I am sure, be prepared to give further advice if, after consultation with the builder, you are unable to obtain satisfactory results.

Regarding air bricks, it is advisable to have air bricks in all rooms not fitted with an open fire; in fact it is a by-law of most local authorities that such provision should be made. The reason for requiring air bricks is that with windows and doors closed there is no provision for movement of air and while with only one or two people in a room for relatively short periods, this would not prove to be serious, it is possible with a number of people quickly to foul the air, or in the case of a bathroom full of steam, a person could quite easily be overcome.

H. O. D.

Town Planning Permission

Q.—On November 12 we deposited an application in principle to develop a piece of land ready for a meeting to be held on the 19th. On inquiry afterwards we were told they had no time at that meeting but would consider it at one to be held on December 17.

As we have not heard anything from the committee since, please let us know our position.

T. J. H.

A.—A legal correspondent writes: The local planning authority must give their decision within two calendar months, except where the proposed development would affect a trunk road; in the latter case, the authority are allowed three months. If they fail to give a decision within the proper time, the applicant can appeal to the Minister as if permission had been refused.

The authority can ask the applicant to agree in writing to an extension of time, but the applicant is under no obligation to agree to this.

A. E. T.

OFFICIAL NOTIFICATION

Export Licensing of Steel Products

THE BOARD OF TRADE announce that licences will, in future, be required for the export to all destinations of all types of pig iron, steel rails, and alloy and non-alloy steel sections, bars and rods. This decision has been made as a result of recommendations by the Iron and Steel Board, to safeguard supplies of steel for the United Kingdom constructional, engineering, and shipbuilding industries. An amending Order came into effect on January 21.

Appointment of Secretary

MR. R. S. BORNER, VRD, has been appointed Secretary of the Chartered Auctioneers' and Estate Agents' Institute when the present Secretary, Mr. F. C. Hawkes, OBE, retires in October.

MoW WINTER LECTURES

Programme for February

The February programme of Ministry of Works lectures on subjects of interest to the building industry is as follows:—

Newport, Isle of Wight.—Feb. 4: 'Thermoplastic Tiling,' by J. C. Parkins, MSc, Marley Tile Co., Ltd., at Isle of Wight Technical College, Hunnyhill. 7 p.m.

Burton-on-Trent.—Feb. 5: 'Sound Practice in the Use of Wood in Building,' by P. L. Money, Timber Development Association, at New Technical College, Manor Croft. 7.15 p.m.

Carlisle.—Feb. 5. 'Problems of Water Supply,' by L. J. A. Show, AMICE, City Engineer and Surveyor, at Carlisle Techical College. 7 p.m.

Wakefield.—Feb. 5: 'Concrete Placing and Formwork,' by A. B. Harman, BSc, AMICE, George Wimpey & Co., Ltd., at the Technical College, Bell-st. 7.15 p.m.

Lincoln.—Feb. 6: 'Dry Rot: Causes, Remedy and Prevention,' by B. W. Eades, Dip. Tim. Tech., Timber Consultant, at the Technical College, Cathedral-st. 7.15 p.m.

Worcester.—Feb. 6: 'Thermal Insulation of Buildings,' by Frank King, FCIS, Structural Insulation Association, at the Crown Hotel, Broad-st. 7.15 p.m.

Workington.—Feb. 6: 'The Function of Building Bye-laws,' by N. Murray, ARICS, Borough Engineer and Surveyor, at Workington Technical College. 7 p.m.

Manchester.—Feb. 7: 'Dry Rot,' by W. P. K. Findlay, DSc, Forest Products Research Laboratory, in the Lecture Theatre, Gas Board's Showrooms, Town Hall Extension, Albert-sq. 7.15 p.m.

Watford.—Feb. 7: 'Corrosion of Metals in Buildings,' by J. I. M. Lewis, MSc, John Laing & Son, Ltd., at the Technical College, Hempstead-rd. 7 p.m.

Wimbledon.—Feb. 7: 'Modern Paints and Painting Practice,' by B. Butler, Leyland Paint and Varnish Co., Ltd., at Wimbledon Technical College, Gladstone-rd., SW19. 7.15 p.m.

Lower Sydenham.—Feb. 8: 'Sound Insulation,' by J. A. Godfrey, ARIBA, DSIR, at LCC South-East London Technical College, Department of Building, Worsley Bridge-rd., SE26. 7.15 p.m.

Barnsley.—Feb. 11: 'Plastic Pipes for Building,' by J. F. Berry, Research Engineer, and C. J. Clark, Research Chemist, Marley Tile Co., Ltd., at the Technical College, Church-st. 7.15 p.m.

Newcastle-upon-Tyne.—Feb. 12: 'An Introduction to Prestressed Concrete,' by R. C. Blyth, MA, MICE, Cement and Concrete Association, in the Lecture Theatre, Chemistry-bldg., King's College, Victoria-rd. 7 p.m.

Slough.—Feb. 12: 'Concrete Placing and Formwork,' by A. B. Harman, BSc, AMICE, George Wimpey & Co., Ltd., at the College of Further Education, William-st. 7.30 p.m.

Stoke-on-Trent.—Feb. 12: 'Structural Uses of Timber,' by A. R. F. McGahan, AMICE, Timber Development Association, at North Staffs Technical College, Building Dept., Cauldon-pl., 7.15 p.m.

Northampton.—Feb. 13: 'Safety in the Building Industry,' by J. A. Hayward John Laing & Son, Ltd., at the Public Library, Abington-st. 7.15 p.m.

Willesden.—Feb. 13: 'The Builder and His Contract,' by Norman P. Greig, BA, at Willesden Technical College, Denzig-rd., NW10. 7 p.m.

York.—Feb. 13: 'An Introduction to Prestressed Concrete,' by R. C. Blyth, MA, MICE, Cement and Concrete Association, at the Technical College, 159, Tadcaster-rd. 7.15 p.m.

Aberdeen.—Feb. 13: 'Thermal Insulation of Buildings,' by R. R. Houston, BSc, Structural Insultaion Association, at Robert Gordon's College. 7.15 p.m.

Stirling.—Feb. 14: 'Thermal Insulation of Buildings,' by R. R. Houston, BSc, Structural Insulation Association, at the Golden Lion Hotel, King-st. 7.15 p.m.

Chatham.—Feb. 14: 'Recent Developments in Prestressed Concrete,' by S. C. C. Bate, BSc, AMICE, DSIR, at Medway College of Technology, Horsted, Maidstone-rd. 7.15 p.m.

Derby.—Feb. 14: 'Safety in the Building Industry,' by J. A. Hayward, John Laing & Son, Ltd., at the College of Art, Green-la. 7.15 p.m.

Hammersmith.—Feb. 14: 'The RIBA Form of Contract,' by J. Stuart Daniel, at Hammersmith School of Building and Arts and Crafts, Lime Grove, W12. 7 p.m.

Darlington.—Feb. 19: 'Foundation Problems,' by N. H. Buchi, BSc, of Tarslag, Ltd., at Technical College, Northgate. 7 p.m.

Stafford.—Feb. 19: 'Some Notable Concrete Buildings,' by R. C. Blyth, MA, MICE, Cement and Concrete Association, at the County Technical College, Cherry-st. 7.15 p.m.

Bolton.—Feb. 20: 'Waste Plumbing and Building Drainage Fundamentals,' by E. H. W. Gunton, MIPHE, Ministry of Works, at Bolton Technical College. 7.15 p.m.

Grimsby.—Feb. 20: 'Temporary Electrical Installations on Building Sites,' by C. Hammersley, BSc, AMIMechE, John Laing & Son, Ltd., at Gas Showrooms, Osborne-st. 7.15 p.m.

Hereford.—Feb. 20: 'Legal Obligations of Building Contractors,' by John J. Clarke, MA, at College of Further Education, Newton-rd. 7.15 p.m.

Hull.—Feb. 20: 'Application of Soil Mechanics to Buildings,' by A. L. Little, BSc, AMICE, of Binnie Deacon & Gourley, at the College of Technology, Park-st. 7.15 p.m.

Portsmouth.—Feb. 20: 'Safety in the Building Industry,' by J. A. Hayward, John Laing & Son, Ltd., at City of Portsmouth College of Technology, Anglesea-rd. 7.15 p.m.

Willesden.—Feb. 22: 'Soil Mechanics in the Building Industry,' by M. W. Leonard, BSc, AMICE, of Soil Mechanics, Ltd., at Willesden Technical College, Denzil-rd., NW10. 7 p.m.

Cambridge.—Feb. 25: 'Weathering and Deterioration of Concrete Renderings,' by C. Hobbs, BSc, John Laing & Son, Ltd., at Cambridgeshire Technical College, Collier-rd. 7.30 p.m.

Rugby.—Feb. 25: 'Sound Practice in the Use of Wood in Building,' by R. P. Woods, BA, Timber Development Association, at Rugby College of Technology and Arts, Eastlands. 7.15 p.m.

Bournemouth — Feb. 26: 'Development Trends in Building Plant,' by W. R. Matthews, AMIMechE, John Laing & Son, Ltd., at Bournemouth Municipal College of Technology and Commerce, The Lansdowne, 7.30 p.m.

South Shields.—Feb. 26: Mixing and Distribution of Concrete,' by A. G. Stone, John Laing & Son, Ltd., at South Shields Marine and Technical College, St. George's-ave. 7 p.m.

Bridgend.—Feb. 26: 'Introduction to Site Costing for Builders,' by A. E. Chittenden, BSc, AMICE, Ministry of Works, at the Wyndham Hotel, Dunraven-pl. 7 p.m.

Haverfordwest.—Feb. 26: 'Introduction to Site Costing for Builders,' by A. E. Chittenden, BSc, AMICE, Ministry of Works, at the Grand Jury Room, Shire Hall. 7 p.m.

Guildford.—Feb. 27: 'The Builder and His Contract,' by Norman P. Greig, BA, at Guildford Technical College, Stoke Park. 7.15 p.m.

Preston.—Feb. 27: 'Surface Finishes of Concrete,' by J. W. Wilson, FRIBA, Cement and Concrete Association, at Harris Institute, Corporation-st. 7 p.m.

Rotherham.—Feb. 27: 'Field Maintenance of Builders' Plant,' by J. Stafford, George Wimpey & Co., Ltd., at the College of Technology, Howard-st. 7.15 p.m.

Shrewsbury. — Feb. 27: 'Thermoplastic Tiling,' by F. L. Brady, MSc, Marley Tile Co., Ltd., at Shrewsbury Technical College, Abbey Foregate. 7.15 p.m.

Llanelly.—Feb. 28: 'Introduction to Site Costing for Builders,' by A. E. Chittenden, BSc, AMICE, Ministry of Works, at the Gymnasium, Technical College, Alban-rd. 7 p.m.

Mansfield.—Feb. 28: 'Recent Developments in Prestressed Concrete,' by S. C. C. Bate, BSc, AMICE, DSIR, at the Technical College, Chesterfield-rd. South. 7.15 p.m.

Keighley.—Feb. 28: 'Essentials of Good Concreting,' by E. E. H. Bate, CBE, MICE, Ministry of Works, at the Technical College. 7.15 p.m.

LAND FOR BUILDING

Builder Appeals Against County Council

SUGGESTIONS that the planning authority of the North Riding County Council had changed its policy over the site of a primary school, after assurances given by a planning officer had induced a York builder and contractor to buy a plot of land, thinking he could build houses on it, were made at a public inquiry at the Flaxton District Council's offices in Bootham, York, on January 17.

Mr. J. McLusky, representing the builder, J. A. Galpine, of Osbaldwick, near York, who was appealing against the County Council's decision to refuse him permission to build houses on Moat Field, Osbaldwick, because the greater part of the field is wanted for a new primary school—said Mr. Galpine was extremely surprised and shocked when he heard from the planning authority a month after he had bought the site that he could not build on it. He had been positively assured by Mr. E. Courtney Turier, an area planning officer for the NRCC, that the planning authority had abandoned its proposals to build a school on the land, and that it was free for development. Relying on this assurance, he bought the land and made proposals to build houses on it.

In evidence Mr. Galpine said that if the NRCC took the greater part of the land for the school, he must suffer considerable financial loss. Answering Mr. W. A. Harrison, for the Council, he disagreed when it was suggested that no assurance had been given to him, but agreed that he had bound himself to buy the land without getting the planning authority's decision on its future.

Mr. Galpine also based his appeal on the grounds that the site was unsuitable and too far away from residential development, and that there was a busy road nearby which would be dangerous for children to cross. Mr. McLusky brought expert evidence to show that there were three other available sites better than the one in Moat Field. Mr. R. M. Atkins, Ministry of Housing and Local Government Inspector, who is hearing the appeal, announced that he would view the site after the proceedings.

BOOKS RECEIVED

*** Books reviewed in these columns may be obtained on application to the Book Dept., 'The Builder,' 4, Catherine-street, Aldwych, WC2. Cash (which should include 1s. to cover postage and packing) should accompany the order.*

THE PLASTIC METHODS OF STRUCTURAL ANALYSIS. By B. G. Neal. (London: Chapman and Hall.) Price 45s.

THE CABINET MAKER DIRECTORY. (Benn Bros. Ltd.) Price 40s.

HOW TO WIN CONFERENCES, MEETINGS AND INTERVIEWS. By W. D. Ellis and F. Siedel. (Kingswood, Surrey: Elliott Right Way Books.) Price 7s. 6d.

PRIVATE ARCHITECTURAL PRACTICE. By Maurice E. Taylor. (London: Leonard Hill (Books), Ltd.) Price 15s.

OFFICIAL ARCHITECTURE AND PLANNING YEAR BOOK, 1957. By Robert McKown. (London: Chantry Publications Ltd.) Price 15s.

HOUSING CONSTRUCTION

LCC Experiments and New Building Techniques

The LCC's Housing Committee reported to the Council at its meeting on January 22 on progress and new projects in the field of research and development and experimental schemes for housing construction on the Council's estates. Some interesting points emerge.

THE main scope of the Council's work so far in this field, aimed at providing better value for money in terms of quality and speed of construction in the housing programme, has been:—

(1) *Major experiments* with nominated contractors (the Picton-street Scheme);

(2) *Other experiments and developments*—(a) Production of standardised components of improved design, at lower costs than similar ones available commercially, e.g., drying cabinets, door furniture, windows, stoves.

(b) Limited experiments introduced into running contracts in regard to new techniques and materials, e.g., branch (shunt) flues, prestressed floors, lightweight screeds, vermiculite plaster.

(c) Preparation of information sheets and standard drawings to achieve the most effective and economic solutions to repetitive problems in the housing programme, often embodying the results of (b) above, e.g., single stack plumbing, extract ventilation systems, chimney design.

Progress and Future Projects

In their report to the Council the Committee outline:

the results so far of the Picton-street (nominated contractor) experiment;

their intentions regarding a competitive tender contract for a scheme on Picton-street lines; and three more nominated contractor experiments with the use of new techniques;

a direct labour scheme designed as a practical test of whether traditional building techniques can be more economically used; and

their intention to increase the scope of the research and development work in the architect's department.

Picton Street Scheme : Interim Results

THE Picton-street experimental contract with a nominated contractor (John Laing & Son Ltd.) was approved in principle by the LCC's Housing Committee on July 15, 1953. The contract for the scheme was approved on December 24, 1954; the order to commence phase I (250 dwellings) was issued on December 31, 1954, and phase II (432 dwellings) on December 30, 1955. The objects of the experiment were to attempt, as a result of joint collaboration between architects, engineers, surveyors and the contractor at design stage, to evolve new techniques of building which would achieve both economy and quicker speed of erection of multi-storey dwellings.

The job itself has now reached a sufficiently advanced stage to enable certain conclusions to be drawn; and the contractor, as a result of his own development work, influenced no doubt by his experience at Picton-street, has produced his own building system, to be called 'High Structure,' which he proposes to offer to local authorities or other building owners throughout the country.

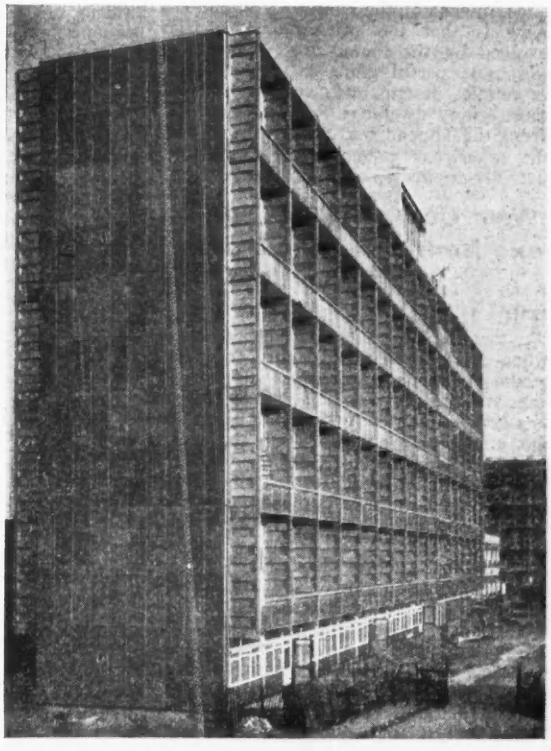
A brief description of the principal techniques and design ideas used at Picton-street is given in Appendix A, together with a short account of the contractor's new system 'High Structure.' Both the Picton-street scheme and the contractor's new system embody very similar design principles. The constructional details are, however, capable of a variety of solutions and it is not considered that any advantage would be gained by attempting to take out patent rights on any particular set of details. It is understood that the contractor has no desire to do so either.

The work to date at Picton-street has already begun to be of great value in influencing the form of design of future schemes in the LCC's housing programme, and the volume of experience and technical information derived from it has fully justified the Council's hopes of the results of collaboration at design stage between architects and their technical colleagues and the contractor. The Council considers it a tribute to the potential economy and value of the design ideas and techniques embodied in the planning of the Picton-street scheme that the contractor should so rapidly have launched his own system on similar lines.

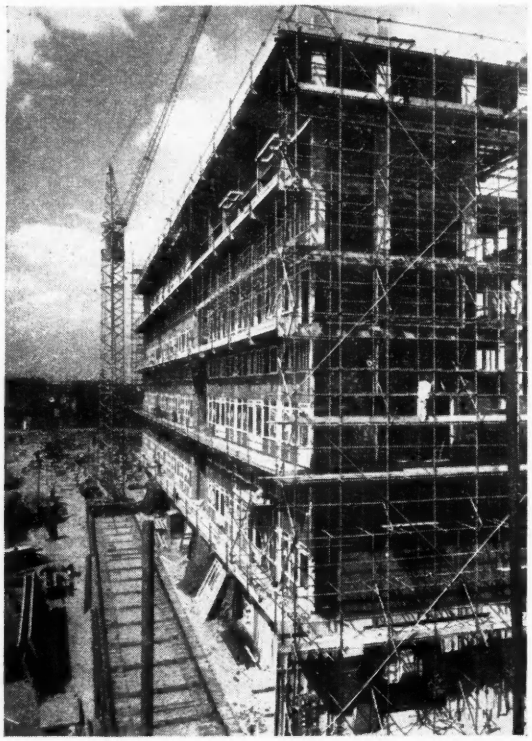
The contract is not due for completion until the end of 1957, after which there will be a period for audit before the final cost is known. In this form of contract, under which payment is made on the basis of actual cost, it is difficult to assess accurately at this stage what the final cost will be. The carrying out of experimental work for the first time is expensive; not only have the contractor's overheads on site inevitably been heavy, but difficulties—inherent in the development and application of entirely new techniques—have been experienced in obtaining satisfactory labour and in agreeing reasonable rates for bonuses. These factors have affected the cost of the work, particularly in respect of the earlier blocks. Against this is to be set the study that has gone into reducing the amount of labour and material in each block. Every item of the designs of both tall and low buildings has been continuously under review in detail during the course of the job at regular meetings between the Council's staff, the contractors, the consulting engineers and the Building Research Station and many suggestions for economy have been made from all sides and put into effect. As a result of these modifications the later blocks will cost less than the earlier ones.

The erection and completion of the first tall block exceeded the time schedule, but, as it was in fact a prototype, this result is not surprising. The later blocks, however, are beginning to show very satisfactory and significant results, and it should be possible on these to reduce the complete cycle, from foundations to finishes for a block of 80 maisonettes, to under 12 months.

From the point of view of the building by-laws, the scheme was given a consent under Part IV of the London Building Acts (Amendment), Act, 1939, due to the fact that much of what was proposed was in contravention of the by-laws and certain relaxations were allowed on an experimental basis. Some of these



Picton Street Scheme (block 10) completed



Fixing cladding panels to gable wall of block No. 10, Picton Street Scheme

relaxations may now be considered as general practice, but others will require further discussion in the light of experience. In general, the Housing Committee's view is that the principles of design evolved by the Picton-street team form the most useful guide to date for the economic design and construction of multi-storey dwellings. As will be seen from the appendix a certain amount of the experience gained has already been usefully applied to current schemes.

New Competitive Tender and Nominated Contractor Schemes

THE Housing Committee have agreed that the stage has now been reached when it is desirable to design a complete scheme, of moderate size, on Picton-street lines for the purpose of going to tender to a selected number of firms, to ascertain the effect of application of the new principles on competitive tendering. The Committee have also decided that concurrently, on another contract, negotiations be entered into with J. Laing & Son Ltd., for a scheme to be carried out in their 'High Structure' System.

Apart from J. Laing & Son Ltd., other contractors have developed particular methods or systems of building multi-storey flats with a view to negotiating contracts for housing schemes; and certain of them have established systems relating design technique to the use of mechanical plant and their building organisation methods which the LCC's Housing Committee consider could prove advantageous to the Council. The advantages they offer may be summarised as follows:—

(a) building techniques which can be regarded as a pace-maker for purposes of comparison with normal building methods;

(b) the possibility of economy and therefore the achievement of a price below the normal run of housing as a result of a highly developed system of organisation;

(c) speed of construction — most of these systems make maximum use of mechanical plant and since they involve considerable capital overheads on this account are designed to reduce the time of building to a minimum;

(d) reduced costs within the Council's organisation, since the firm itself would undertake a proportion of the drawings and specifications normally produced by the Council.

Reference has already been made to the system of building developed by John Laing & Son Ltd., following on their collaboration with the Council in the Picton-street development scheme. Wates, Ltd., has also developed a system of building multi-storey flats—maximum use being made of a mobile tower crane and of the precasting of large concrete units for beams, staircases and external wall cladding. As a result of their technique and organisation, for example, four of the 11-storey blocks on the Council's Trinity-road (Fitzhugh) Estate, Wandsworth, were completed seven, six, five and four months respectively ahead of the contract time.

During 1956, the Chairman of the Housing Committee took the opportunity, during a visit to Austria, to look at the Bittner system of construction for which W. C. French are now completing arrangements to act as licensees in the London area. Basically an *in-situ* concrete construction system, it appears to offer potential economies in building, at the same time making the maximum use of appropriate existing trades, e.g., plasterers, in contrast to other systems which rely largely on prefabrication.

Other systems being investigated are likely to be the subject of further reports to the Housing Committee. Meanwhile, the Housing Committee have authorised the Council's Architect to prepare schemes for two appropriate sites and, subject to layout and estimates being approved, to negotiate (a) with Wates, Ltd., with a view to the construction of one scheme in their building system, and (b) with Messrs. W. C. French with a view to the construction of a scheme using the Bittner system.

Scheme to Test Traditional Techniques

TRADITIONAL methods and their costs have been used as a yardstick for the purpose of measuring 'value for money' in the Council's building experiments involving new techniques, materials and methods aimed at discovering whether better value for money may result from the use of these techniques than from the traditional methods commonly in use. The Housing Committee have now decided to make a practical test of whether the traditional methods themselves are as wisely used as they might be, and whether they produce results of as great economy as is possible consistent with maintaining a high standard of design.

It is considered that such a re-appraisal of traditional methods is likely to produce valuable results and can only fairly be made by a team of which the builder is a member from the outset. The Committee have agreed that this could best be effected if the building work on a scheme were carried out by the Council's direct labour force. By these means the LCC's Director of Housing could collaborate with the Architect throughout the whole course of the scheme, including its design.

The Committee have therefore authorised the Architect and the Director of Housing to prepare a scheme for an appropriate site which, subject to the layout and estimates being approved, would later be carried out by direct labour; the object during the preparation and building of the scheme being the making of a special study of the use of traditional techniques and materials under contemporary site conditions. The scheme selected will be a small one of four to six storey blocks, utilising basically 'traditional' or customary techniques and materials, the object being the most rational use of plant, labour and materials to secure a high standard of aesthetic and functional design at the most economical cost possible.

Expansion of Research and Development Work

APART from the service in testing materials provided by the LCC's Scientific Adviser in the Public Health Department, the work of this nature which has been carried out in the past has been done either by collaboration with the Building Research Station or by reliance on the good will of manufacturers and contractors. From experience gained so far, it is considered that greater advantage would accrue if the scope of the Council's own practical building experiments, which constitute an essential part of the development programme, were enlarged; and the Housing Committee have decided to include £2,000 in their estimates for 1957-8 for this purpose. This enlarged programme will include not only work in

connection with the design of prototypes but also investigations into techniques and materials and urgent functional or planning problems. In this category are included such problems as condensation, ventilation, sound insulation, smells and noise from refuse chambers. The Building Research Station facilities and the services of the Council's Scientific Adviser and of manufacturers and contractors will continue to be used to the fullest extent.

The expansion of development work in the Architect's department is likely to take the following forms:—

(a) The carrying out of limited functional and planning experiments and the further introduction of new methods, materials or components experimentally into running contracts.

(b) The manufacture by selected specialist firms of prototypes for standard components and the manufacture of limited quantities of components for experimental installation.

(c) The carrying out of special investigations, testing, etc., or actual building experiments by other departments of the Council.

APPENDIX A : Summary of Principal Technique and Design Ideas Used in the Picton Street Scheme

(i) CONCRETE CROSS-WALL CONSTRUCTION: These walls have been satisfactorily and very rapidly erected by the use of a tower crane and very large plywood-faced shuttering units. In these circumstances, they have proved to be as cheap (using normal reinforcement) as a column and beam frame, and yet to have definite advantages over a frame, when used as party walls, in saving space on plan, in sound insulation, in avoiding cracks between columns and beams and infill partitions and in avoiding awkward projections into rooms. Experimentally, as a further economy, the steel reinforcement has been omitted from alternate walls and the consultant engineer is of the opinion that this experiment has been successful, and that, given certain design criteria, a principle has been established which could be used on similar future work. The economy due to the omission of steel could be of the order of £12-£20 a maisonette.

(ii) *Large precast concrete floor (and other) units:* These units, cast on site, have proved a satisfactory rapid and economical method of floor construction—given a tower crane. Vacuum treatment has greatly helped speed of construction and attainment of a good standard of finish. Similarly the main staircase consists of large precast flights, with separate precast treads of a better quality finish. All beams have also been precast on site.

(iii) *Reduction of plastering on walls and ceilings:* A serious effort was made to make the concrete floors (precast) and walls (in situ) with such a high standard of finish that plastering would be eliminated and only decoration required. This aim has not in fact been achieved. On the ceilings (soffits of the precast floors) it was in fact very nearly achieved, and several of the earlier ceilings were finished only with stopping and an emulsion paint. On the walls greater difficulty was experienced, and a variety of single coat applications were experimented with, including a preparation widely used in Sweden for similar situations. Finally, as a compromise, a skim coat only of vermiculite-gypsum plaster was used for walls and ceilings, though on the latter the concrete is so good that the plaster can be used only as a filler with hardly any thickness. It is considered that it is only a matter of time and further experiment before plastering can be satisfactorily omitted on concrete work of this kind.

(iv) *Partitions:* These are light-weight timber frames, with plasterboard on both faces, with no wet plaster except at the joints and for nail-hole fillings. A variety of alternative methods of fixing and finishing have been tried, including the elimination of wet plaster stopping and the use of wallpaper, but considerable difficulties have been experienced in keeping labour on the job and in deciding which trade is to perform which operation. As a result, although the Council's surveyors and those of the contractor and the Building Research Station are of the opinion that the labour and material content of the designed partitions should show very considerable economies, these have not in fact been realised on the job. The shortage of carpenters has been at times a serious problem, resulting in a decision to revert to traditional partitions in certain instances, and to use a particular kind of preformed plaster board partitioning in others.

(v) *External panel walls:* These are large, light-weight, timber-framed units, faced externally on the tall blocks with hardwood boarding, and on the lower blocks with asbestos board and ribbed aluminium sheet. The use of hardwood as an external facing material is a pioneer departure from previous by-law practice. Extremely useful experience has been gained in the design and detailing of this kind of panel which the Council has already begun to use on other schemes. By and large the work shows that it is possible to design a variety of such panel walls at a cost competitive with that of brickwork, at the same time providing better thermal insulation and more rapid erection.

Balcony Construction

(vi) *Balcony construction:* The balcony floors are precast units, similar to the main floor slabs, and are carried on precast cantilever brackets, which also support the vertical members carrying the balcony fronts. These cantilever brackets and precast slabs have been shown to be an excellent method of construction—again given the use of a suitable crane.

The possible omission of asphalt and screeds on balconies has been investigated on later blocks, but to take advantage of the idea would necessitate additional expense for new sets of moulds and this would cancel out any savings. It is considered, however, that given vibrated and precast concrete of the quality obtained at Picton-street, this economy could safely be effected on future schemes.

(vii) *Timber floor finish:* A floating timber floor on insulating quilt has been used instead of the normal plastic tile finish on a floating screed. This gives a slightly better standard of sound insulation and has been shown to be quicker to lay and competitive in cost.

(viii) *Electric services:* The scheme was used by the Chief Engineer as a prototype for a more economical type of installation for maisonettes. The timber floor finish (above) which permits the use of TRS cable contributes to this economy. The scheme also served as a prototype for a new system of mains service cables, which were run horizontally in the space between the ground floor ceilings and the first floor, with vertical service conduits and cables to each dwelling cast into the party walls, the distribution boards being accessible from the front of the building through duct doors in the fascia at first floor level.

(ix) *Prefabricated timber structural floors:* The consulting engineer designed an unusual type of prefabricated timber floor, for the intermediate floors of the maisonettes, and these have been made in a workshop on site and crane handled into position. They economise in timber content, but require slightly more labour operations than a traditional floor. It has again been extremely difficult to assess their real cost owing to the difficulties experienced by the contractor at certain times in obtaining carpenters and in agreeing reasonable bonus rates. Given the tower crane they are likely to prove a suitable and economic type of floor for maisonettes in tall blocks.

Ventilating Duct Construction

(x) *Duct Construction:* The tall blocks are the first ones containing a double set of ventilation ducts for internal bathrooms and drying cabinets to reach construction stage and invaluable experience has been gained in the problems of attempting to precast and simplify these ducts, which has already been made available to other schemes. The use of a deep twin beam to carry the floor units on both sides of the ducts, and at the same time to form the points of entry for branch connections and the junctions between vertical branch and main ducts has been a particular contribution.

(xi) *Flue construction:* This has been solved by the use of precast refractory concrete flue liners, of more than usual length, cast into the solid concrete walls. The design of these has also served as a prototype for other schemes in the current programme.

(xii) *Concrete cladding (gable walls):* In spite of the simplification of details, of crane-handling and the economy of casting these slabs on site, the overall cost of this form of external walling (together with the insulating block lining and damp precautions, etc.) remains slightly above that of cavity brickwork and of the light-weight panel infilling. It is, nevertheless, a valuable form of cladding, particularly for unwindowed sheer walls in tall blocks, and the Picton Street work has reduced the design detailing for such walls to the economic minimum.

(xiii) *Plumbing:* The tall block sanitary installation contains the first full-scale application in this country of a new and very rapid and simple method of jointing pipes with a neoprene ring (in lieu of brazing, caulking, screwed joints, etc.). Also in one block valves have been included for shutting off the anti-siphonage pipes for test purposes so that the extent to which the unvented 'single-stack' system can be extended to tall blocks can be tested by experiment. An assessment of both these experiments cannot readily be made until later.

(xiv) *Four-storey construction:* The cross-walls in the Picton Street four-storey blocks are in unreinforced concrete because the contractors possessed a large stock of used steel shuttering and were able to construct them more economically this way than in brick. As a general rule wall construction to at least five storeys high would be cheaper in fletton brickwork than in concrete. The main floors were cast in situ, but the use by the contractors of a crane, not contemplated for these blocks at design stage, influenced a decision to change to precast slabs on the later blocks.

(xv) *Miscellaneous:* A number of experiments of various kinds have been made, and are still being made, with the co-operation of the contractors, in various aspects of the

work, all of which have a direct value in relation to the general housing programme.

These include, for example, alternative ways of constructing the roof of the four-storey blocks, to overcome problems inherent in laying asphalt or bitumen felt on top of an insulating screed over the structural concrete, e.g. (a) a structural precast roof slab made of insulating concrete, and (b) a timber roof with straw-board infilling panels.

Again, low-grade brick rubble aggregate has been used in foundations and chimney stacks of the four-storey blocks, where the stresses are very low, and small but definite savings have resulted. Considerable sampling and testing of the aggregate is required, however, and more than usual supervision of the work, and in view of the uncertain supply position it is doubtful if this offers scope for any substantial economies.

'High Structure': Design Principles

THE DESIGN IDEAS incorporated in John Laing & Son, Ltd.'s system known as 'High Structure' include the following principles of construction which are similar to those used at Picton Street:—

(i) Concrete cross-wall construction for the party walls.

(ii) Precast concrete floor slabs in large units (but corrugated in section, not solid as at Picton, to reduce weight and allow electric services to be run over or underneath).

(iii) Precast balcony floor slabs supported on cantilever brackets.

(iv) Precast staircases (but designed in a slightly different way).

(v) Reduction of wet plastering on walls and ceilings (although this obviously may be modified by local conditions).

(vi) Light-weight dry construction partitions.

(vii) Light-weight, storey height by room size, single thickness, external wall panels (made of light-weight concrete in lieu of timber, but again obviously flexible and capable of modification to the client's requirements).

(viii) Floating timber floor finish on insulating quilt.

In the case of multi-storey flats (as opposed to maisonettes) intermediate cross-walls, alternating with the party walls, will occur within the flats, requiring doorways and openings through them. These will not be load-bearing concrete walls but will consist of precast column and beam frames with an ingenious system of jointing, and infilling panels of light-weight blocks.

The system is intended to be used with central heating but with independent electric or gas hot-water storage heaters within each dwelling.

Domestic Heating

Volume II of the reported proceedings of the Conference on Domestic Heating, organised last May by the Institute of Fuel, has just been published, completing the transactions of the conference. The second volume contains some important papers that arrived too late for inclusion in Volume I as well as the full record of the contributions to the discussion, replies and summing up of the proceedings. Volumes I and II can be obtained from the Institute of Fuel, 18 Devonshire-street, W1. Price 31s. 6d. Extra copies of Volume I can be supplied at 21s.

PREFABRICATED BUILDING

Mr. Cleeve Barr Addresses Group

AN invitation to all engaged in the prefabrication of buildings to join the Prefabricated Building Industry Executive Committee was made by MR. W. W. GARDAM, chairman of the committee, at a dinner of the group held in the Dorchester Hotel on January 17. The Committee, he said, was the central receiving depot for all matters of interest to the industry, and had as its main aim the creation of conditions leading to a stable home market on which the export market depended.

The invited speaker was MR. A. W. CLEEVE BARR, ARIBA, assistant housing architect, LCC, who spoke on some of the problems which at present stand in the way of a fuller application of prefabrication to building.

'My first point,' said Mr. Barr, 'is the necessity of understanding the conditions on building sites. I am sure it must sometimes break your hearts to see materials which have been produced under tidy factory conditions handled on site as if they were so much hard-core—plaster board and joinery bashed about and left to get damp, bags of bolts trodden in the mud, corners chipped off concrete members, and mortar or plaster droppings over everything. The traditional industry relies on cheap labour for the basic work and then on covering everything up with plaster, cover fillets and paint. Wastage is high and the cost of supervision low. For prefabricators the moral is, I suggest: take care when you put your eggs into the builder's basket that he does not scramble them for you. A new kind of labour and of supervision is required on sites if the maximum advantage is to be taken of factory-made parts, with fine tolerances and a far higher degree of protection. New trades of dry-wall fixers, or assemblers and finishers of other components, need to be trained by the manufacturers themselves. They will be slow to develop under normal site conditions from the traditional trades within the industry itself. Given such labour and supervision, one looks forward to seeing packaged components, wrapped in cellophane, visqueen or what have you, sealed at works against moisture in transit, transforming the interior finishing of buildings into a white-coated workers' job.

Manufacturers' Erection Teams

'Again one must bear in mind that a great many clients—certainly all local authorities—require their architects to obtain competitive tenders which, if an architect wishes to specify the same components on a succession of different buildings, may mean their being handled by a different contractor in each case. This is another strong argument in favour of the manufacturer having his own erection team.

'My second point is the need for a full appreciation of design factors. I am very conscious myself of the wide difference in standards of design between different prefabricated building systems—some dry-wall garages which I have seen in the new towns, for example, are first class, while some buildings intended for schools look like amateur chicken-houses. Other prefabricated school systems are, of course, excellent and have made an enormous contribution. The answer is, of course, not only to have a good architect, but to bring him in right at the start, when the basis of the system, or product, is being discussed with the workshop foreman or whoever it is. The contemporary architect gains his inspiration, if any, from the basic elements, materials and processes inherent in the building itself. Please do not employ him as a stylist. It will cost you more in materials and labour if you do than if you bring him in at the production stage.

Agreed Modular Sizes

'In this connection, although I recognise that certain firms have and still are making a big national contribution with complete prefabricated building systems, my view is that the future lies with the production of building components, which in themselves avoid any conscious design stylisation, but which give the architect maximum flexibility in combining them together—prefabricated beams and columns, partition systems, roofing systems, wall and window systems, and so on. The great need here, of course, is for an agreed system of modular sizes to which manufacturers can produce. We all know the good work being done by Mark Hartland Thomas and the Modular Society. My own view on this again is that architects —whimsical chaps as they are—are not easily or quickly, as a profession, going to agree on this, and that the manufacturers will probably have to force the pace. Agreement on production ranges of sizes for standardised parts is certainly a problem which your committee could take further, with Modular Society guidance.

'My last point is the need for a more scientific approach to design on the part of the prefabricated building industry to solve a number of outstanding weaknesses concerning the functional requirements of whole buildings or elements of buildings. For example, no prefabricated system which I have yet seen reaches a decent level of sound insulation—some of them even reverberate and amplify sound. Then there is the problem of external finishes on wood, keeping its natural colour, pattern staining due to differential thermal loss, which in a building I know has doubled the normal maintenance costs of redecoration, the problem of flues, of sensible foundations for light structures, and so on.

'On the problem of sound insulation in light-weight walls, I seriously suggest that the Building Research Station would have produced much more effective answers by now if your association, acting as the representative body of your special branch of industry, had very strongly urged upon DSIR the necessity of doing so.'

Discussion

Discussion was carried on by MR. MARK HARTLAND THOMAS, secretary of the Modular Society, who said that if we were to make the building industry into a modern industry we must solve the dimensional problem. It was possible in these days to make fine engineered panels which were decorative, weather and fire resistant and had good insulation properties, but we would never get anywhere until manufacturers decided how large they should be.

MR. R. A. NEWSUM felt that the British Standards Institution and the Building Research Station should join in with the group and with the Modular Society and so get a decision that manufacturers would accept.

Others who contributed were MESSRS. G. FISH, A. L. OSBORNE, FRIBA, and A. E. BURRAGE. MR. IAN M. LESLIE, Editor of *The Builder*, responded for the guests.

TOWN PLANNING DECISIONS

'Gross Over-development of Oxford Site': Minister Rejects Proposed Redevelopment

A PROPOSAL by Russell Acott, Ltd., of High-street, Oxford, to demolish some old buildings adjoining their existing premises in the centre of the city and to redevelop the site by the construction of a five-storey block, partly for their own use and partly to be let off as offices, has been rejected by the Minister of Housing and Local Government following an appeal against the refusal of Oxford City Council to allow the proposed development.

In announcing his decision to support the council's refusal, the Minister states that the erection of a building of the size proposed would represent a gross over-development of the site, which is closely surrounded by other buildings. Moreover, the provision of office accommodation as proposed would generate additional traffic and increase congestion in an already crowded area.

Land Allocated in Development Plan for Social and Community Purposes: Proposals for Residential Development: Successful Appeal

THE Minister of Housing and Local Government has recently given his decision on an appeal by Mr. E. W. Buck against the refusal of Caterham and Warlingham UDC, acting on behalf of Surrey CC, to grant planning permission for the erection of 12 houses, with garages, and the construction of an access road and two tennis courts, on about 1¼ acres of land at the rear of Five Ways Club, Hamsey Green, Warlingham.

The appeal site is an irregularly-shaped area of back-land near the centre of the small village of Hamsey Green. It is bounded on the west by a school and playing fields, and there are shops and houses to the north, east and south. Access to the proposed houses would be obtained from Tithe Pit Shaw-lane to the north, by a drive leading between Hamsey Green farmhouse and the farm buildings, one of which is now used as a club.

On behalf of the local planning authority, it was stated that permission had been granted in 1950 for the use of the appeal site and the neighbouring farm buildings as a social club, with a cricket pitch, tennis courts and a car park, and in the Development Plan this land had been allocated for social and community purposes. This group of outbuildings adjoining Hamsey Green farmhouse (which was listed under Section 30 of the Town and Country Planning Act, 1947, as a building of special architectural or historic interest) was the only group of character left in Hamsey Green and, if retained as a whole, would be eminently suitable to meet the deficiency in entertainment facilities in the area. The present proposal involved the demolition of part of this group of outbuildings, it would bring residential development undesirably close to the clubhouse, and it would destroy the opportunities which the site offered for effective treatment.

On behalf of the appellant, it was stated that: (1) It was not the appellant's responsibility to provide accommodation for local organisations and the local authority had made no move to do so; (2) the outbuildings which it was proposed to demolish were not used or needed in connection with the club; and (3) if the development were allowed, a public view of the outbuildings, including the tithe barn, would be obtained.

Representations against the proposed development were made by a number of local residents.

In giving his decision, which was reached following his consideration of the written representations of the parties, the Minister says he notes that neither the county council nor the urban district council have put forward any proposal for securing the use of the site for the purpose shown in the development plan. The council also raised the objection that part of the farm outbuildings would be demolished to make way for the access road, but these buildings are already largely screened by houses and shops, and he does not consider this objection of sufficient force to justify withholding permission. He has also considered the effect of the proposal on the general appearance and character of the area, and has come to the conclusion that, having regard to the existing development in the vicinity, the proposed houses would not be out of place or detract from the appearance of Hamsey Green farmhouses. Moreover, although Hamsey Green is in the Green Belt, this particular site is close to the centre of the village and almost surrounded by development, and he is satisfied that he would not be justified in requiring the land to be kept as an open space.

The Minister has decided, therefore, to allow the appeal in accordance with the submitted plans, subject to the condition that the elevations of the buildings and the layout of the junction of the access road with Tithe Pit Shaw-lane shall be as may be agreed with the local planning authority, or, failing agreement, as shall be determined by the Minister.

Ban on Building Within the Green Belt Supported by Minister on Appeal

THE Minister of Housing and Local Government has announced his decision to support Buckinghamshire County Council in its refusal to grant planning permission for the carrying out of a number of private building schemes at Iver, Denham, Littleworth Common and Slough.

Except for the project at Slough, which was for shops, refusal was based on the need to preserve the Green Belt laid down by the County Development Plan.

Of the Denham proposal, the Minister says: 'The area which includes the appeal site is a very vulnerable part of the Green Belt where there is a great demand for building sites and where the Ministry is anxious to preserve the countryside against the spread of further development. In general, only houses for essential agricultural purposes and infilling of small gaps between houses in existing villages can be permitted if the Green Belt proposals are to remain effective.'

The Minister applies this argument also to the Iver building scheme.

Minister Allows Light Industrial Use of Bexley Building

AN appeal by Blendon Tool and Engineering Co. Ltd. against the refusal of Bexley Council to grant planning permission for an existing building on land at the rear of the Railway Tavern, off High-street, Bexley, to be used for light industrial purposes has been allowed by the Minister of Housing and Local Government.

The building was used until 1951 for milk bottling and, since then, primarily for agricultural purposes. The Council had refused permission on the ground that the use of the building for light engineering purposes would be a material change of user and would constitute development as defined in Section 12 of the Town and Country Planning Act, 1947.

The Minister, in the course of his decision, says he agrees but, in considering the planning merits of the proposal, he notes that it involves the re-location of a small industry already existing within the borough. Although he agrees with the Council that it would be wrong to allow a general incursion into the area allocated for shopping purposes, he is satisfied that the proposal under appeal would constitute a reasonable use of the building, sited as it is in a comparatively isolated position flanking the railway. He sees no reason to doubt that the access to the site is adequate for the purpose proposed, and has accordingly decided to permit the use of the building for the manufacture of press tools, plastic moulds, jigs and fixtures.

PETROL THREAT TO EMPLOYMENT

National President on Builders' Difficulties

'THE PETROL and fuel oil rationing scheme affects every branch of the building industry, and I would like to congratulate the retiring Minister, Mr. Buchan-Hepburn, on his decision to set up at the Ministry of Works at a very early stage a committee representative of all buildings interests—architects, surveyors, manufacturers, builders' merchants, contractors, specialists and operatives—to keep the special difficulties of the industry under constant review and to make them known to the rationing authorities,' said MR. NIGEL HANNEN, President of the National Federation on January 18. He was was addressing the annual meeting in Cardiff of the South Wales Federation. Mr. Hannen added: 'The Committee has met weekly and I hope that as a result of its work the industry will get the fair share of petrol and other fuels to which its special circumstances entitle it and that serious unemployment will therefore be avoided.'

Return Loads

The Road Haulage Association has speeded up publication of its directory of long distance hauliers. The directory, available from the Association at 146, New Bond-street, W1, contains some 700 addresses to which hauliers can apply when seeking return loads during the present fuel shortage.

The Builder

CURRENT PRICES OF MATERIALS

THE information given on these pages has been specially compiled for *The Builder* and is copyright. It is the intention that the details given should indicate fair average prices of materials, not necessarily the highest or the lowest. The prices apply to large quantities of materials loaded at works, delivered at London Stations or at site in London Area as stated. Prices for smaller quantities ex merchant's warehouse will necessarily be higher so as to include the stocking and handling costs involved. Due to the exceptional circumstances now prevailing it is recommended that the prices of materials should be confirmed by inquiry from suppliers and merchants.

AGGREGATES AND SAND

Delivered site in full lorry loads. Average of prices for Boroughs of Westminster, Paddington, Holborn and St. Pancras.

		£ s. d.
Pit Ballast	per yd.	1 7 0
Pit Sand	,,	1 4 5
Washed Sand	,,	1 7 7
¾ in. Shingle	,,	1 3 11
¼ in. Broken Brick	,,	1 0 6
Pan Breeze	,,	10 9
Fine or Coarse Foamed Slag Aggregate	per ton	3 5 0

2 yds. of fine and 2.6 yds. of coarse per ton.

CEMENT, etc.

Including non-returnable jute sacks or paper bags.

		£ s. d.
Best British Portland Cement. Standard Specification delivered Charing Cross area.		
6-ton loads and upwards, site	per ton	5 4 6
1 to 6 tons, site	,,	5 16 6
Rapid Hardening Cement in 6-ton loads and upwards to site	,,	5 15 0
1 to 6 tons do. site	,,	6 7 0
Aquacrete Water Repellent Cement. 32s. 6d. per ton on ordinary cement prices.		
Sulphate Resisting Cement. 32s. 6d. per ton on ordinary cement prices.		
Red, Buff or Khaki Colorcrete in 6-ton lots	,,	8 1 0
Other colours according to colour.		
In 4-ton lots from 298s. 0d. to 688s. 0d. per ton.		
White Portland Cement	,,	13 5 0
Under 1 ton	per cwt.	15 10
417 Cement (Ultra Rapid Hardening) in 6-ton lots and upwards	per ton	6 17 0
Super Cement (Waterproof), 32s. 6d. per ton above Portland Cement.		
Cullamix Tyrolean Finish, £11 8s. 0d. to £14 3s. 0d. (1-ton loads and upwards).		
Lightning and Ciment Fondu Brands High Aluminous cement, 6-ton lots and up	,,	14 15 9
Stourbridge Fireclay, 6-ton loads at Railway Depot, London	,,	6 17 6
Moler Mortar Powder for Flue Bricks (London sites)	per cwt.	1 10 0

BRICKS

		£ s. d.
Full Loads.		
First Hard Stocks	per 1,000	12 17 0
Second Hard Stocks	,,	11 16 0
Mild Stocks (Kiln Burnt)	,,	9 1 6
Mild Stocks	,,	8 16 6
All loaded free into lorry at the works. The question of haulage is still very difficult and prices must be obtained from job to job.		
2½ in. Nominal Fletton Bricks to sites in W.C. District Commons	,,	5 15 0
Cellular do.	,,	5 15 0
Keyed do.	,,	5 17 0
Rustics	,,	7 5 0
Cellular Rustics	,,	7 5 0
Single Bullnose Commons	,,	7 5 0
Sandfaced	,,	8 2 6
Tuscans	,,	8 17 6
Saxons	,,	9 5 6
Golden Buffs	,,	9 12 6
Dapple Light	,,	10 7 6
Best Blue Pressed Staffs (London Stations)	,,	28 15 6
,, Bullnose (London Stations)	,,	29 9 6
Blue Wire Cuts (London Stations)	,,	25 19 0
Midhurst Lime Bricks (London sites)	,,	10 8 0
Uxbridge Whites (London sites)	,,	9 17 0
Special Purpose Sandlime Bricks (London sites)	,,	7 18 6
2½ in. Best Stourbridge Fire Bricks (London Stations)	,,	27 16 3
3 in. do. (London Stations)	,,	33 8 0
2⅞ in. Moler Flue Bricks (London sites)	,,	36 0 0
2⅝ in. Machine-made Sandfaced Red Facings (London sites)	,,	15 8 6
2½ in. Machine-made Multi Red Facings (London sites)	,,	15 13 6
2½ in. Hand-made Sandfaced Red Facings (London sites)	,,	15 13 6
2⅝ in. Hand-made Sandfaced Multi-Colour Facings (London sites)	per 1,000	16 8 6
Hand-made Sandfaced Cherry Red Facings. Berkshire district (London sites)	,,	18 19 0
Hand-made Sandfaced Multi-Colour Facings. Berkshire district (London sites)	,,	18 19 0
Rubber Bricks for gauged arches (London sites)	,,	42 17 6
2⅝ in. Surrey Clamp Burnt Multi Stock Facings (London sites)	,,	13 16 6
2⅝ in. Surrey Kiln Burnt Multi Stock Facings (London sites)	,,	15 6 0
Glazed Bricks (London sites), White, Ivory, Brown— Stretchers	,,	64 0 0
Headers	,,	63 0 0
Quoins, Bullnose and 4½ in. Flats	,,	80 0 0
Double Stretchers	,,	85 0 0
Double Headers	,,	77 10 0
One side and two ends	,,	87 0 0
Two sides and one end	,,	89 10 0
Splays and Squints	,,	83 0 0

Cream and Buff £3 extra over White. Other colours, hard glaze, £8 10s. 0d. extra over White. All above prices plus 25% for Best quality and plus 25% less 10% for Second quality.

PARTITION SLABS, etc.

Delivered Central London Area. (W.C. District.)

HOLLOW CLAY PARTITION BLOCKS (Keyed)

	Minimum lorry loads		
*2 in.	140 yds.	per yd. sup.	4 5
*2½ in.	140 yds.	,,	4 8
*3 in. (3 cavity)	120 yds.	,,	5 5

BUILDING BLOCKS (Keyed)

*3 in. (6 cavity)	110 yds.	,,	5 7
*4 in. (6 cavity)	95 yds.	,,	6 10
6 in. (8½ in. × 5⅝ in.)	1,250 blocks	per 1,000	26 18 0

* Half blocks at no extra charge.

CLINKER CONCRETE

2 in.	100 yds.	per yd. sup.	3 9
2½ in.	85 yds.	,,	4 4
3 in.	75 yds.	,,	5 3
4 in.	55 yds.	,,	6 5

CRANHAM

2 in.		,,	6 9
2½ in.		,,	7 5
3 in.		,,	8 9
4 in.		,,	10 9
4½ in. Load bearing quality		,,	11 10

MOLER PARTITION BLOCKS

2 in.	150 yds.	,,	16 3
2½ in.	120 yds.	,,	16 6
3 in.	100 yds.	,,	16 10
4 in.	90 yds.	,,	20 0

LIGHTWEIGHT CONCRETE BUILDING AND PARTITION BLOCKS OF VARIOUS SOURCES OF MANUFACTURE

2 in.	100 yds.	,,	5 10
2½ in.	80 yds.	,,	7 0
3 in.	65 yds.	,,	8 2
4 in.	50 yds.	,,	9 8
4½ in.	44 yds.	,,	10 4
6 in.	33 yds.	,,	13 10½

THERMALITE-YTONG PARTITION BLOCKS

2½ in.	144 yds.	,,	7 1

THERMALITE-YTONG LOADBEARING INSULATING BLOCKS

3 in.	120 yds.	,,	8 6
4 in.	90 yds.	,,	11 1
5 in.	72 yds.	,,	13 10
6 in.	60 yds.	,,	16 7
8½ in.	42 yds.	,,	1 3 9

FLOOR BLOCKS AND FILLER TILES

3 in. Floor Blocks 12 in. by 12 in. delivered in full lorry-loads		per 1,000	34 1 0
4 in. do.		,,	36 10 0
5 in. do.		,,	43 15 0
6 in. do.		,,	49 19 0
7 in. do.		,,	61 8 0
8 in. do.		,,	71 19 0
12″ × 3″ × ⅝″ Filler Tiles in multiples of 10 tiles per 1,000 multiples			42 15 0
12″ × 4″ × ¼″ do.	do.		73 15 0

STONEWARE DRAIN PIPES, etc.

The following are the percentages to be added to the Revised Standard List (Nov., 1956) prices delivered London Area.

Delivered ex Merchants Wharf or Depot or Manufacturers Works.

	Over 2 tons	Over 100 pieces Under 2 tons	Under 100 pieces Under 2 tons
Best Quality	−7½%	+8¾%	+15%
BSS Best do.	+10% −7½%	+10% +8¾%	+10% +15%
Tested Quality	+37½% −7½%	+37½% +8¾%	+37½% +15%
BSS Tested do.	+47½% −7½%	+47½% +8¾%	+47½% +15%

STONEWARE DRAIN PIPES, etc.—*continued*

	£	s.	d.
3 in. Land Drain Pipes (in 12 in. lengths) ... per 1,000	11	5	6
4 in. do. ... ... ,,	14	16	6
6 in. do. ... ... ,,	30	14	0
9 in. do. ... ... ,,	58	9	0

DAMP COURSE

Hessian base bitumen 7 lb. per yd. sup. in 24 ft. rolls cut to wall widths in lots of £6 value and over delivered London area ... ... per yd. sup.		3	7
Asbestos base ditto 7 lb. per yd. sup. do. do. ,,		5	6
Lead lined bitumen ditto 9½ lb. per yd. sup. do. ,,		12	6
18 in. × 9 in. British damp course slates ... ... per 1,000	41	12	8
14 in. × 9 in. do. do. ... ... ,,	32	0	0
9 in. × 9 in. do. do. ... ... ,,	18	2	6
18 in. × 4½ in. do. do. ... ... ,,	19	2	6
14 in. × 4½ in. do. do. ... ... ,,	15	4	9
9 in. × 4½ in. do. do. ... ... ,,	10	5	3

STONE

Bath Stone—			
Monks Park ... ... per ft. cube		8	1½
St. Aldhelm Box Ground ... ... ,,		9	1½
Delivered in railway trucks at South Lambeth B.R. Western Region.			
Doulting Stone Random Blocks. Delivered London area ,,		8	11
Beer Stone. Delivered London area ... ... ,,		8	5
Portland Stone—			
Brown Whitbed in random blocks, 20 ft. average delivered in railway trucks at Nine Elms, B.R. Southern Region ... ... ,,		8	5
Yorkshire Stone—Blue Robin Hood Quality.			
Delivered to site London in 6-ton lots.			
9 in. × 3 in. Rubbed, weathered, throated and stooled cills ... ... per ft. cube	3	17	9
12 in. × 6 in. do. do. ... ... ,,	2	15	6
12 in. × 3 in. Plain coping, twice throated ... ,,	2	3	0
12 in. × 3 in. Weathered and twice throated coping ,,	2	17	3
14 in. × 6 in. do. do. ... ... ,,	2	11	9
4½ in. × 9 in. Plinth, rubbed on top and face ... ,,	2	6	3
3 in. sawn two sides Slabs, random sizes ... ... per ft. sup.		8	3
Templates and Cover Stones, 3 in., 4 in. and 6 in. thick, edges coped for rendered brickwork ... per ft. cube	1	8	3
Do. do. fair one edge for fair faced brickwork ... ... ,,	1	13	6
Hard York—			
12 in. × 2 in. Square Steps, rubbed on top and edge per ft. run		10	0
14 in. × 3 in. Round-nosed Steps, rubbed on top and front ... ... per ft. cube	2	12	9
12 in. × 6 in. Plain Steps, rubbed top and front ,,	2	6	3
2 in. Rubbed and Jointed Paving, given sizes ... per ft. sup.		9	4
2 in. Sawn Paving, edges squared, in random sizes per yd. sup.	3	5	3

TILES AND PANTILES

Delivered London area by road in 6 tons or over per 1,000			
Machine-made Pantiles and French pattern Tiles from Lincolnshire district	29	19	0
Hand-made Pantiles Berkshire district	55	18	0
Hand-made Double Roman Bridgwater district	59	5	0
Hand-made 10½ × 6½ tiles Berkshire district	15	9	0
Machine-made 10½ × 6½ Staffordshire district	14	1	9
Hand-made Hip and Valley tiles per doz.	1	11	3
Machine-made Hip and Valley tiles do.	1	8	0
Concrete tiles 10½ × 6½	8	5	6
do. Interlocking (49S)	19	9	6

NOTE.—Breakage in transit, purchasers' responsibility.

SLATES

First-quality Slates from Penrhyn or Portmadoc, carriage paid in full truck loads to London Rate Station. Per 1,000 actual.			
24 × 12	137	2	4
22 × 12	111	8	0
22 × 11	100	14	1
20 × 12	94	9	10
20 × 10	90	8	6
18 × 10	62	17	0
18 × 9	55	1	6
16 × 10	49	10	0
16 × 8	38	15	3

NOTE.—Breakage in transit, purchasers' responsibility.

TIMBER

Softwood—						
Joinery quality	Ex Wharf		per standard	£115 to £140		
Carcassing quality		do.	,,	£97 to £102		
1 in. Tongued and Grooved Flooring		do.	,,	£110	0	0
Hardwood—						
Mahogany—African S.E.		do.	per ft. cube	1	10	0
do. Honduras do.		do.	,,	3	5	0
Oak European do.		do.	,,	2	5	0
do. Japanese do.		do.	,,	2	10	0
do. English Logs sawn		do.	,,	1	17	6
Teak 8 in. average S.E.		do.	,,	3	17	6
Walnut African Logs sawn		do.	,,	1	5	0

DOORS (in Lots I-11)

	£	s.	d.
Delivered London area.			
1½ in. 4 Horizontal Panel. Pattern 4 in. deal			
2 ft. 0 in. × 6 ft. 6 in. ... ... each	1	12	0
2 ft. 3 in. × 6 ft. 6 in. ... ... ,,	1	13	0
2 ft. 6 in. × 6 ft. 6 in. ... ... ,,	1	14	0
2 ft. 9 in. × 6 ft. 6 in. ... ... ,,	1	16	6
2 in. do. but top panel open. Pattern 4 × G in deal			
2 ft. 6 in. × 6 ft. 6 in. ... ... ,,	2	9	0
2 ft. 9 in. × 6 ft. 6 in. ... ... ,,	2	11	6
2 in. 2 Panel, top panel open. Pattern 2 × G in deal			
2 ft. 6 in. × 6 ft. 6 in. ... ... ,,	2	1	9
2 ft. 9 in. × 6 ft. 6 in. ... ... ,,	2	3	6

SUNDRIES

Delivered London area.			
1 in. Wood Wool Slabs, 6 ft. 0 in. × 2 ft. 0 in. in quantities of 1 ton (89 yds. to 1 ton) ... ... per yd.		5	8
1½ in. do. (67 yds. to 1 ton) ... ... ,,		7	4
2 in. do. (52 yds. to 1 ton) ... ... ,,		8	11½
2½ in. do. (45 yds. to 1 ton) ... ... ,,		10	3
3 in. do. (39 yds. to 1 ton) ... ... ,,		11	5½
Quantities under 1 ton add 1d. per ½ in. of thickness.			
½ in. imported insulation Board, quantities over 5,000 sq. ft. per 100 sq. ft.	2	2	6
⅛ in. Hardboard do. ... ... ,,	2	1	6
3/16 in. do. do. ... ... ,,	3	2	6
3/16 in. Asbestos Flat Building Sheets ... ... per yd. sup.		3	8
¼ in. do. ... ... ,,		4	10
Roofing Felt, 1-ply ... ... ,,		1	9
do. 2-ply ... ... ,,		2	2½
Best Scotch Glue in slabs ... ... per ½ cwt.	5	0	0
do. pearl ... ... ,,	5	5	0
Croid Glue ... ... 28 lb.	2	6	0
Cut Nails 3 in. (1-ton lots) ... ... per ton	70	10	0
do. 4 in. and up (1-ton lots) ... ... ,,	67	0	0
Wire Nails, 3 in. (4-cwt. lots) ... ... per cwt.	3	6	10
do. 4 in. and up (4-cwt. lots) ... ... ,,	3	6	3

METALS

STEEL JOISTS, ETC.

Basis Joists—			
6 in. × 5 in., 8 in. × 5 in., 8 in. × 6 in., 10 in. × 6 in., 12 in. × 6 in. plain cut to lengths delivered London area ... ... per ton	48	2	6
Extra for sizes			
3 in. × 1½ in. 4 in. × 1¾ in. ... ... ,,	3	10	0
3 in. × 3 in. ... ... ,,	2	10	0
4 in. × 3 in. ... ... ,,	2	5	0
10 in. × 4½ in. ... ... ,,	1	10	0
5 in. × 2½ in. 5 in. × 3 in. ... ... ,,	1	15	0
4¾ in. × 1¾ in. ... ... ,,	3	5	0
5 in. × 4½ in. 7 in. × 3½ in. 13 in. × 5 in. ,,		15	0
6 in. × 3 in. 24 in. × 7½ in. ... ... ,,	2	0	0
6 in. × 4½ in. 7 in. × 4 in. 8 in. × 4 in. } ,,	1	5	0
9 in. × 4 in. 10 in. × 5 in. ... ... }			
12 in. × 5 in. 22 in. × 7 in. ... ... ,,	1	0	0
9 in. × 7 in. 10 in. × 8 in. 12 in. × 8 in. }			
14 in. × 5½ in. 14 in. × 6 in. 14 in. × 8 in. }			
15 in. × 5 in. 15 in. × 6 in. 16 in. × 6 in. } ,,		10	0
16 in. × 8 in. 18 in. × 6 in. 18 in. × 7 in. }			
18 in. × 8 in. 20 in. × 6½ in. 20 in. × 7½ in. }			
Steel angles average price ... ... ,,	50	5	0
Steel tees average price ... ... ,,	51	5	0
Fabricated work delivered London—			
R.S. Joists cut and fitted ... ... ,,	65	12	6
Compound girders ... ... ,,	71	15	0
Stanchions ... ... ,,	77	2	6
Compound stanchions ... ... ,,	81	10	0
In Roof Work—Trusses and Purlins ... ... ,,	94	15	0
Average prices not for awkward work.			
Angle cleats and ⅜ in., ½ in. and ⅝ in. bolts average price London area ... ... per cwt.	5	7	6

FERRO-CONCRETE BARS

Mild Steel Ferro-Concrete bars British manufacture to BSS785 ex London Stock ⅜ in. diam., and upwards ... ... per ton	46	5	0
¼ in. diam. ... ... ,, extra	8	12	0
5/16 in. do. ... ... ,,	6	12	0
⅜ in. do. ... ... ,,	4	12	0
½ in. do. ... ... ,,	3	2	0

MILD STEEL TUBES

Tubes to BSS1387 and Fittings. List prices and following discounts :

Galvanised Tube—	Under 1 ton	Over 1 ton	W.I. Fittings	Malleable Fittings
Class A	+ 14¼%	+ 9¼%	Light + 36%	Malleable List
Class B	+ 26 %	+ 21 %	Heavy + 43½%	−28½% + 40%
Class C	+ 44¼%	+ 39¾%		
Black—				
Class A	− 8½%	− 13½%	Light + 22¾%	Malleable List
Class B	+ 4¼%	− 3%	Heavy + 30¼%	− 28¾%
Class C	+ 19¼%	+ 14¼%		

C.I. HALF-ROUND GUTTERS

Delivered London per yd. in 6-ft. lengths

	Gutters	Nozzles	Stop Ends
3 in.	3/10½	3/5	1/–
3½ in.	4/2½	3/9	1/–
4 in.	5/5½	4/3	1/6
4½ in.	5/11½	4/9	1/9
5 in.	6.8	5 1	2 1

METALS—*continued*

C.I.O.G. Gutters

	Gutters	Nozzle	Stop Ends
3 in.	5/–	4/6	1/2
3½ in.	5/7	4/6	1/6
4 in.	6/2	4/9	1/9
4½ in.	6/8	5/5	2/1
5 in.	7/3½	6/2	2/4

C.I. Rain-water Pipes

Per yd. in 6-ft. lengths	Pipe	Bends	Branches
2 in.	8/3½	4/3	6/1
2½ in.	8/3½	4/9	8/2
3 in.	9/3½	5/11	8/10
3½ in.	10/7	7/–	10/7
4 in.	12/3	8 5	12/7

L.C.C. Coated Soil Pipes

2 in	9/5	7/3	8/10
2½ in.	9/9½	8/–	11/–
3 in.	11/1½	8/10	13/–
3½ in.	12/5½	11/–	15/2
4 in.	14/2	12/3	17/11

Above prices for gutters, rain-water and soil pipes for under 5 cwt. lots only. Lots over 5 cwt. see List No. 3300 dated February 1, 1955, plus 17½% and tonnage allowance. 4-ton lots 5 per cent., 2-ton lots 2½ per cent.

L.C.C. Coated Drain Pipes

	In 9-fts. cwt. qt. lb.	per yd.	Bends	Branches
4 in.	1 1 17	33/6	23/–	41/–
6 in.	2 0 1	49/2	61/3	98/–

Asbestos Rain-water Pipes and Fittings

All less 17½ per cent. discount.

		2 in.	2½ in.	3 in.	4 in.
Pipes 6-ft. lengths	per yd.	4/3	4/6½	5/6	7/3½
Shoes	each	2/9	3/–	3/7	4/10
Single Branches	,,	4/4	5/1	6/1	8/6
Bends square or obtuse	,,	3/–	3/4	4/4	6/1
Swan Necks 4½ in. proj.	,,	3/4	4/4	4/10	6/9
,, 6 in. ,,	,,	3/7	4/4	5/5	7/3

Asbestos O.G. Gutters and Fittings

		4 in.	4½ in.	5 in.	6 in.
Gutters 6 ft. lengths	per yd.	4/1	4/5½	5/4	6/4½
Drop ends	each	3/3	3/9	4/5	5/2
Stop ends	,,	1/–	1/1	1/2	1/4
Angles	,,	3/4	3/10	4/8	5/5
Nozzles	,,	3/3	3/9	4/5	5/2
Union Clips	,,	1/7	1/11	2/4	2/8

Asbestos Half-Round Gutters and Fittings

		3 in.	4 in.	4½ in.	5 in.	6 in.
Gutters 6 ft. lengths	per yd.	2/10	3/4½	3/5½	4/1	5/8
Drop ends	each	2/4	2/9	3/–	3/4	4/10
Stop ends	,,	–/11	1/–	1/1	1/2	1/4
Angles	,,	2/8	3/–	3/4	3/7	4/10
Nozzles	,,	2/4	2/9	3/–	3/4	4/10
Union Clips	,,	1/2	1/3	1/4	1/6	2/3

	Per ton basis in London £ s. d.
Iron—Staffordshire Crown Merchant Quality	49 7 6
Mild Steel Bars	43 18 0
Mild Steel Hoops	44 2 6

	Ex Merchant's Stock per ton Two-ton lots £ s. d.
Soft Sheets C.R. and C.A.—	
20 gauge	58 2 6
24 gauge	60 12 6
26 gauge	63 12 6
Galvanised Corrugated sheets 6 ft. to 9 ft.—	
20 gauge	66 17 0
24 gauge	70 7 0
26 gauge	75 12 0
Galvanised flat sheets C.R. and C.A.—	
20 gauge	68 7 0
24 gauge	71 17 0
26 gauge	77 2 0

ALUMINIUM AND ALUMINIUM ALLOYS

(Base prices)		£ s. d.
Sheet BS 1470 SIC 18 SWG (36 in. wide)	per lb.	2 10½
Sheet BS 1470 NS3 Utility 18 SWG (36 in. wide)	,,	2 8
Coiled strip BS 1470 SIC 18 SWG (24 in. wide)	,,	2 9½
Coiled strip BS 1470 NS 3 Utility 18 SWG (24 in. wide)	,,	2 7½
Coiled strip for flashing 99.7% purity 22 SWG (12 in. wide)	,,	3 0
Corrugated sheet BS 1470 NS 3 Utility Circular Profile 8 ft. × 32 in. × 20 SWG	per sheet	1 12 0
Corrugated sheet BS 1470 NS 3 Utility Industrial Profile 8 ft. × 31¼ in. × 20 SWG	,,	1 17 11
Corrugated sheet BS 1470 NS 3 Utility Mansard Profile 8 ft. × 31¼ in. × 20 SWG	,,	1 11 2
Extruded section BS 1476 E1C simple moulding	per lb.	2 8½
Extruded section BS 1476 E1C 1 in. diam. round	,,	2 6
Extruded section BS 1476 HE1WP simple angle	,,	2 11½
Extruded section BS 1476 HE10WP 1 in. diam. round	,,	2 10½
Tubing BS 1471 T1C 1½ in. O/D × 20 SWG	,,	4 3½
Tubing BS 1471 HT10WP 1½ in. O/D × SWG	,,	5 6½

PLUMBERS' BRASS WORK, etc.

Delivered in London area.

All per doz.	½ in.	¾ in.	1 in.	1¼ in.	1½ in.	2 in.
	M.O.H.					
Screwdown bib cocks Crutch head for iron	87/–	128/8				
Toilet bib cocks for iron	109/–	158/5				
Screwdown stop cocks for iron	66/–	95/9	188/–	363/–	522/6	917/6
do. with two unions for lead	89/–	132/–	234/4	472/–	623/6	1389/6
Double nut boiler screws	18/8	26/5	47/6	48/6	67/–	93/6
Heavy Croydon ball valves	77/–	193/6	312/5	568/8	734/10	—
Plumbers' union brass lead to iron	19/6	23/6	38/6	52/10	70/6	165/–
	–	1¼ in.	1½ in.	2 in.	3 in.	3½ in. 4 in.
Caps and screws	33/–	40/8	59/6	92/5	118/10	155/3
Brass sleeves		31/11	31/11	56/2	74/10	91/5
		1½ × 6 lb.	1½ × 6 lb.	2 × 7 lb.	3 × 7 lb.	
Lead P. trap with brass cleaning screws	72/–	90/–	144/–	246/–		
Lead S. trap do.	87/–	108/–	177/–	318/–		

Solder		s. d.
Plumbers'	1 cwt. lots 351/– 14 lb. lots per lb.	3 6
Tinmen's	,, ,, 427/– ,, ,,	4 1
Blow pipe	,, ,, 430/– ,, ,,	4 3

Copper Tubes and Sheets

Copper tubes BSS 659/1944 on the basic price of 30¾d. per lb. plus gauge and manufacturing extras as follows. Minimum quantities, 3 cwt.

	Extra d.		d.	d.
⅜ in. × 19 gauge	14	Total per lb.	44⅞	approx per ft. 12
½ in. × 19 ,,	12½	,, ,,	43½	,, ,, 16½
1 in. × 18 ,,	10½	,, ,,	41½	,, ,, 26
1¼ in. × 18 ,,	10½	,, ,,	41½	,, ,, 31½
1½ in. × 18 ,,	10½	,, ,,	41½	,, ,, 37½
2 in. × 17 ,,	11⅞	,, ,,	42½	,, ,, 60

Rolled Copper sheets up to 48 in. wide, basic price plus gauge and manufacturing extras ... ... per ton 313 15 0

Zinc

			s. d.
Sheet Zinc	10 gauge (25 SWG)	5 cwt. lots upwards per cwt.	8 9 0
do.	12 gauge (23 SWG)	,, ,,	8 6 6
do.	14 gauge (21 SWG)	,, ,,	8 5 3

Brass Tubes

Brass tubes basic price. plus gauge and manufacturing extras ... ... per lb. 2 1½

LEAD SHEET AND PIPES

Basis selling price in minimum one-ton delivery to one address in London or Home Counties.

		£ s. d.
Lead Sheet, English, 3½ lb. substance and upwards	per ton	155 0 0
Lead Water Pipe in coils	,,	157 5 0
Lead Soil Pipe 10 ft. or over 2 in. to 4 in. dia.	,,	158 15 0
,, over 4 in. dia.	,,	160 15 0
Lead Gas or Untinned Compo pipe	,,	158 15 0
Extras over Basis for quantities under 1 ton		
5 cwt. and under 1 ton	per cwt.	2 0
3 cwt. do. 5 cwt.	,,	4 0
1 cwt. do. 3 cwt.	,,	6 0

Smaller quantities than 1 cwt. priced specially.

Supplying sheet lead and lead pipe to less than basis weights and cutting to sizes less than basis charged extra according to current trade schedule.

Allowance for Old Lead, collected £110 10s. 0d. per ton weighed at buyer's works.

PLASTER, etc.

			£ s. d.
Coarse Pink in 1-ton loads and over Delivered on Site		per ton	8 2 3
do. White	do.	,,	8 11 9
Sirapite Coarse	do.	,,	8 4 3
do. Fine	do.	,,	8 12 3
Blue Lias Lime in 6-ton loads		,,	6 14 6
Hydrated Lime (Grey)	do.	,,	5 17 6
do. (White)	do.	,,	6 5 0
Lump Lime (Grey)	do.	,,	5 7 0
do. (White)	do.	,,	5 14 6
White Keen's or Parian Cement in 1-ton loads		,,	11 11 9
Pink Keen's or Parian Cement in 1-ton loads		,,	11 6 6
Granite Chips in 6-ton loads		,,	2 10 6
Hair		per cwt.	4 17 0
Gypsum Plaster Lath or Base Board ⅜ in. thick 600 yds. and over in one delivery. Delivered site 1,200 yds.		per yd.	2 4
		,,	2 3½
Do. Insulating do. ⅜ in. thick 600 yds. and over in one delivery. Delivered site 1,200 yds.		,,	3 0
		,,	2 11½
Gypsum Plaster Wall Boards, 3 and 4 ft. wide, 6 to 12 ft., ⅜ in. thick, 600 yds. and over in one delivery. Delivered site 1,200 yds.		,,	2 7
		,,	2 6½
Do. Insulating do. ⅜ in. thick 600 yds. and over in one delivery. Delivered site 1,200 yds.		,,	3 3
		,,	3 2½

PAINT AND DISTEMPER

		£	s.	d.
Delivered London area				
Ceiling Distemper	per cwt.	1	7	6
Washable Distemper	,,		5	5	0
Gloss Paint	per gal.	2	12	0
Snowcem cement paint (in 1 cwt. drums)	per cwt.	3	11	0
LEAD PRODUCTS AND OILS				
Ground White Lead, 1 cwt. kegs	per cwt.	9	14	0
Genuine White Lead Paint, 1-19 gal. lots in 1 gal. tins	per gal.	3	9	6
Genuine Red Lead, Dry, 1 cwt. keg	per cwt.	7	12	0
Genuine Linseed Oil Putty, 1 cwt. keg	,,	3	0	0
Size XD quality, 28 lb.	per tin		9	0
Raw Linseed Oil (5 gal.) drums extra	per gal.		17	3
Boiled Linseed Oil (5 gal.) do.	,,		17	9
SUNDRIES				
Turpentine substitute (5 gal.) drums extra	,,		6	6½
do. do. (40 gal.) do. do. ...	,,		5	10½
Solignum, Brown (5 gal. cans) Exterior	,,		8	4
Creosote (40 gal. barrels)	,,		2	0
Paste Powder (1 lb. packets)	per lb.		2	0
White Lining Paper	per piece		1	1

VARNISHES, etc.

		£	s.	d.
Delivered London area				
Oak Varnish, Outside or Inside	per gal.	1	18	0
Oak Pale Copal do.	,,	1	18	0
Hard Drying Oak for Inside	,,	2	1	0
Crystal Paper Varnish do.	,,	2	4	0
Eggshell Flat Varnish do.	,,	2	6	0
Finest Carriage Varnish	,,	2	5	0
Front Door Varnish	,,	2	1	0
Japan Gold Size	,,	1	14	0
Black Japan	,,	1	15	0
Brunswick Black	,,	1	10	0
Berlin Black	,,	1	7	6
Terebene	,,	1	13	0
Knotting (1 gal. bottles free)...	,,	2	7	0
French and Brush Polish (do.)	,,	2	0	0

GLASS

	per ft. super s. d.
Delivered London area	
18 oz. Sheet Glass Ordinary Glazing Quality. Cut Sizes	6½
24 oz. ,, ,, ,, ,, ,, ,,	8½
26 oz. ,, ,, ,, ,, ,, ,,	11
32 oz. ,, ,, ,, ,, ,, ,,	1 2½
⅛ in. Rolled Plate	10½
⅛ in. and ¼ in. Rough Cast	1 2½
⅛ in. Figured Rolled and Cathedral, Standard patterns:	
White	10½
do. Standard Tints	1 8
do. Special Tints	3 4
⅛ in. Pinstripe, Hammerstripe, Reeded, Reedlyte and Luminating	1 3½
¼ in. Wired Cast	1 5
¼ in. Georgian Wired Cast	1 5½

Hollow Glass Blocks—		Each
P.B.2.	5¾ × 5¾ × 3⅞ in.	2 11
P.B.3.	7¼ × 7¼ × 3⅞ in.	4 5
P.B.32.	7¼ × 7¼ × 3⅞ in.	4 5
Radiused Corner Blocks to match up with—		
P.B.2.	... ...	5 6
P.B.3.	... ...	7 0
P.B.32.	... ...	7 0

¼ in. Polished Plate Glass, G.G. Quality—	Per ft. super s. d.
In plates not exceeding 2 ft. sup.	3 10
,, ,, ,, 5ft. sup.	4 9
,, ,, ,, 45ft. sup.	5 7
,, ,, ,, 100ft. sup.	6 0

¼ in. Polished Plate, extra sizes, *i.e.*, plates exceeding 100 ft. sup. or 160 in. one way or 96 in. both ways. G.G. quality —Not exceeding 135 ft. sup. or 250 in. one way or 135 in. both ways 9 0
Not exceeding 180 ft. sup. or ditto 12 1
Not exceeding 200 ft. sup. or ditto 17 2
Plates exceeding 200 ft. sup. prices on application.
Substances other than ¼ in. Polished Plate at Special Prices.

Quantity Tariff—Sheet and Sundry Glass.

The following prices apply to minimum quantities of one size and one pattern delivered by the manufacturer to one site at one time.

Description of Glass	Minimum quantity	Per ft. sup. s. d.
18 oz. sheet O.Q.	3,000	4½
24 oz. ,, ,, ...	2,000	6½
26 oz. ,, ,, ...	2,000	8½
32 oz. ,, ,, ...	2,000	11½
⅛ in. Rolled Plate	1,000	8½
⅛ in. Figured Rolled and Cathedral Standard Patterns, White	1,000	8½
⅛ in. Pinstripe, Hammerstripe, Reeded, Luminating and Spotlyte...	1,000	11½
⅛ in. and ¼ in. Rolled Plate or Rough Cast ...	2,000	1 0
¼ in. Wired Cast, Hexagonal...	2,000	1 2
¼ in. Georgian Wired Cast	2,000	1 2½

The Builder
CURRENT RATES OF WAGES

AS FROM OCTOBER 1, 1956. (Every endeavour is made to ensure accuracy but we cannot be responsible for errors.)

KEY TO SCHEDULE OF GRADE RATES.

Grade Classification.	A	A1	A2
Craftsmen	4/3½	4/3	4/2½
Labourers	3/9	3/8½	3/8

Town.	Grade.
Aberavon	A
Aberdare	A
Abergavenny	A
Abingdon	A1
Accrington	A
Addlestone	A
Afan Valley	A
Aldeburgh	A1
Aldershot District	A1
Alfreton UD	A
Alnwick UD	A
Altrincham	A
Amble	A
Ambleside	A1
Amersham	A1
Ammanford	A
Andover	A1
Anglesey, Isle of	A1
Ardingly	A2
Arundel	A2
Ascot	A2
Ashbourne RD	A1
Ashbourne UD	A1
Ashby-de-la-Zouch UD	A
Ashby Woulds UD	A
Ashford (Kent)	A2
Ashford (Middlesex)	A
Ashington UD	A
Ashtead	A
Ashton-under-Lyne	A
Aspatria and Brayton	A1
Atherstone RD	A
Attleborough	A1
Axminster	A1
Aylesbury	A1
Aylsham	A1
Bagshot	A1
Bakewell UD	A1
Banbury	A1
Bangor	A1
Barnard Castle UD	A
Barnoldswick UD	A
Barnsley CB	A
Barnstaple	A1
Barrow-in-Furness	A
Barrow-upon-Soar RD (part Thrussington)	A1
Barry	A
Basford RD (exc. Willough-by-on-the-Wolds A1)	A
Basingstoke	A1
Bath	A
Batley MB	A
Baxterley	A1
Beaconsfield District	A
Bearl	A
Beccles	A1
Bedale RD	A
Bedford	A
Bedlington	A
Bedlingtonshire UD	A
Bedwas	A
Beeston & Stapleford UD	A
Belper UD	A
Belton	A
Berkhamsted	A
Berrington	A1
Berwick Borough	A
Beverley MB	A
Bewdley MB	A
Bexhill-on-Sea	A2
Bideford	A1
Biggleswade	A1
Billericay	A
Billing	A
Billingham UD	A
Bilsthorpe	A
Bilston MB	A
Birchington	A2
Birkenhead	*
Birmingham CB	†A
Bishop Auckland UD	A
Bishop's Stortford	A
Bishops Castle MB	A1
Bispham	A
Blackburn	A
Blackpool	A
Blackwell RD	A
Blandford	A1
Blaydon UD	A
Blidworth	A
Blyth B.	A
Bodmin	A1
Bognor Regis	A2
Boldon UD	A
Bolsover UD	A
Bolton	A
Boston MB	A
Bourne End	A
Bournemouth District	A
Brackley MB	A1
Bracknell	A2
Bradford CB	A
Bradford-on-Avon	A1
Braintree	A1
Brandon & Byshottles UD	A
Brecon—Borough of	A1
Breconshire, County of	‡A1
Brent Knoll	A1
Brentwood	A
Bridgend	A
Bridlington MB	A
Bridlington RD	A1
Bridgnorth MB	A1
Bridgnorth RD	A1
Bridgwater	A1
Brierfield	A
Brighouse MB	A
Brighton & Hove	A
Bristol District	A
Broadstairs	A2
Bromsgrove UD	A
Broughton, Flint	A
Buckfastleigh	A1
Buckingham	A1
Buckley	A
Bungay	A1
Burnham-on-Crouch	A1
Burnham-on-Sea	A1
Burnley	A
Burton-on-Trent C.B.	A
Bury	A
Bury St. Edmunds	A1
Buxton	A
Byfleet	A1
Caernarvon	A1
Caernarvonshire, Cnty. of	‡A1
Calder Valley	A
Camberley District	A1
Cambridge	A
Cannock UD	A
Canterbury	A2
Cardiff	A
Cardiganshire, County of	‡A1
Carlisle	A

CURRENT RATES OF WAGES—Continued

Town.	Grade.
Carlton UD	A
Carmarthen—Borough of	A1
Carmarthenshire, Cnty of ‡	A1
Carnforth	A
Castleford UD	A
Caterham	A
Chapel-en-le-Frith	A
Chard	A1
Charmy Down	A
Chatham District	A
Chatteris	A1
Cheadle (Staffs) RD	A
Chelmsford	A
Cheltenham	A
Chepstow	A
Chertsey	A
Chester	A
Chester-le-Street UD	A
Chesterfield MB	A
Chesterfield RD	A
Chichester	A2
Chipping Norton	A1
Chipping Sodbury	A1
Chippenham (inc. Chippenham Within and Hardenhuish)	A1
Chorley	A
Cirencester	A1
Clacton	A1
Clay Cross UD	A
Cleethorpes MB	A
Clevedon	A1
Cleveleys	A
Clitheroe	A
Coalville UD	A
Cobham (Surrey)	A
Colchester	A
Colne	A
Colwyn Bay	A1
Congleton	A1
Consett UD	A
Conway	A1
Corby UD	A
Cornwall, County of	‡A1
Corsham District	A
Coventry CB	A
Cranbrook	A2
Cranleigh	A2
Cranwell Aerodrome Site	A
Crawley	A1
Crewe	A
Crewkerne	A1
Cromer	A1
Crook and Willington UD	A
Crowborough	A2
Cuckfield	A2
Cwmbran	A
Dalton-in-Furness	A
Darlington CB	A
Dartmouth	A1
Darwen	A
Daventry MB	A1
Deal	A2
Denbigh Town	A1
Derby CB	A
Devizes	A1
Devon, County of	‡A1
Dewsbury CB	A
Didcot	A2
Diss	A1
Doncaster CB	A
Dorchester	A1
Dorking	A
Dorset, County of	A1
Dover	A2
Dovercourt	A
Driffield UD	A1
Drigg & Carleton	A
Droitwich MB	A
Dudley CB	A
Dunstable	A
Durham B	A
Eastbourne	A
E. Glam. & Mon. Val.	A
East Grinstead District	A2
East Kesteven RD	A1
East Retford MB	A
Eastwood (Notts) UD	A
Ebbw Vale & District	A
Edenbridge	A1
Ely	A1
Epping	A
Evesham MB	A1
Exeter	A
Exmouth	A1
Fakenham	A1
Falmouth	A1
Fareham	A
Faversham	A2
Felixstowe	A1
Filey UD	A
Fleetwood	A
Flint MB	A
Folkestone	A2
Frinton	A1
Frome	A1
Gainsborough UD	A
Gateshead CB	A
Gillingham (Dorset)	A1
Gillingham (Kent)	A
Glastonbury & Street	A1
Glossop	A
Gloucester	A
Gloucestershire, Cnty. of ‡	A1
Godalming	A2
Goole, MB	A
Goole RD (part—Airmyn, Hook)	A
Gosport	A
Grantham MB	A
Gravesend	A
Grays Thurrock UD Area	A
Great Yarmouth	A
Grimsby CB	A
Grimsby RD (part)	A1
Guildford District	A2
Halesowen MB	A
Halifax CB	A
Halstead	A1
Haresfield	A1
Harlow	A
Harpenden	A
Harrogate MB	A
Hartlepool B	A
Harwell	A2
Harwich	A
Haslemere	A2
Hastings	A2
Hatfield (Herts)	A
Havant	A
Haywards Heath	A2
Heanor UD	A
Hemel Hempstead	A
Henley-on-Thames	A1
Hereford	A1
Herefordshire, Cnty. of	‡A1
Herne Bay	A2
Hertford	A
Hexham RD	A
Hexham UD	A
Heysham	A
Heywood	A
Higham Ferrers MB	A
High Wycombe	A
Hinckley UD	A
Hitchin	A
Hoddesdon	A
Holywell	A
Horley	A1
Horncastle UD	A1
Horsham	A2
Horwich	A
Huddersfield CB	A
Hull	A
Hunstanton	A1
Huntington (Staffs)	A
Ilfracombe	A1
Ilkeston MB	A
Ilkley UD	A
Ipswich	A
Isle of Sheppey	A2
Isle of Thanet	A2
Isle of Wight	A2
Jarrow B	A
Keighley MB	A
Kendal	A
Kenilworth UD	A
Kettering MB	A
Keynsham	A
Kidderminster MB	A
Kingskerswell	A1
King's Lynn	A1
Kingsteignton	A1
Kirkham	A
Knaresborough UD	A
Knutsford	A
Lancaster	A
Leamington MB	A
Leatherhead	A
Leeds CB	A
Leek UD	A
Leicester CB	A
Leighton Buzzard	A1
Leiston	A1
Leominster	A1
Letchworth	A
Lewes	A2
Lichfield MB	A
Lincoln CB	A
Liskeard	A1
Littlehampton	A2
Liverpool	*
Llandudno	A1
Llanelly (incl. Llanelly RD)	A
Llanfairfechan	A1
Llangollen	A1
London	*
Long Eaton	A
Looe	A1
Loughborough MB	A
Louth MB	A1
Lowestoft	A
Loxton	A1
Ludlow MB	A1
Ludlow RD	A1
Luton	A
Lyme Regis	A1
Lyneham (Devon)	A1
Lytham	A
Macclesfield	A
Maidenhead	A
Maidstone	A
Maldon (Essex)	A1
Maltby UD	A
Malton UD	A1
Malvern UD	A1
Manchester	A
Manningtree	A1
Mansfield MB	A
March	A1
Margate	A2
Market Harborough RD	A1
Market Harborough UD	A
Market Rasen UD	A1
Martock	A1
Maryport	A
Matlock UD	A
Melksham	A1
Melton Mowbray UD	A1
Merionethshire	A1
Merthyr	A
Mexborough UD	A
Middlesbrough CB	A
Middleton	A
Middlewich	A
Mildenhall	A1
Milford Haven UD	A1
Minehead	A1
Monmouth—Borough of	A1
Monmouthshire	A1
Morecambe	A
Moreton Valence	A1
Morley	A
Morpeth B	A
Morpeth RD	A
Mundesley	A1
Nantwich	A
Neath & Valley	A
Nelson	A
Newark MB	A
Newbury	A1
Newcastle-on-Tyne CB	A
Newcastle-under-Lyme	A
New Forest District	A1
Newmarket	A1
Newport, Mon.	A
Newport Pagnell	A1
Newquay	A1
Newton Abbot	A1
Normanton UD	A
Northallerton District	A
Northallerton UD	A
Northampton CB	A
North Shields	A
North Walsham	A1
Northwich	A
Norton Radstock	A1
Norwich	A
Nottingham CB	A
Nuneaton MB	A
Oakham RD	A1
Oakham UD	A1
Okehampton	A1
Oldham	A
Ongar	A
Ormskirk	A
Ossett & Horbury	A
Oswestry	A1
Oundle UD	A1
Oxford	A
Oxted	A1
Padstow	A1
Paignton	A1
Par	A1
Pembrokeshire (except Milford Haven)	A1
Penmaenmawr	A1
Penrith UD	A1
Penzance	A1
Peterborough, Soke of (Eastern Regional portion)	A1
Petersfield	A1
Pickering	A1
Plymouth	A
Pontefract MB	A
Pontypool & District	A
Pontypridd District	A
Porthcawl	A
Portishead	A
Portland Bill	A1
Portsmouth	A
Port Talbot	A
Preston	A
Princetown	A1
Pudsey MB	A
Pulborough	A2
Radnorshire, County of	‡A1
Ramsgate	A2
Raunds UD	A
Rayleigh	A
Reading	A
Redcar B	A
Redditch UD	A
Redhill & Reigate	A
Rhondda Valley	A
Richmond B (Yorks)	A
Ripon MB	A1
Rochdale	A
Rochester	A
Ross-on-Wye	A1
Rossendale Valley	A
Rotherham CB	A
Royston	A1
Rugby MB	A
Rugeley UD	A1
Rushden UD	A
Saffron Walden	A1
St. Albans	A
St. Austell	A1
St. Helens	A
St. Neots	A1
Salisbury City	A1
Salisbury Plain	A1
Sandy	A1
Sawbridgeworth	A
Saxmundham	A1
Scarborough MB	A
Scunthorpe MB	A
Seaford & Newhaven	A2
Selby UD	A
Sevenoaks	A
Shaftesbury	A1
Sheerness	A2
Sheffield MB	A
Shepton Mallet	A1
Sherborne	A1
Shipley	A
Shoeburyness	A
Shoreham	A
Shrewsbury MB	A
Sirhowy Valleys	A
Sittingbourne	A2
Skegness UD	A1
Skipton UD	A
Sleaford UD	A1
Slough, Windsor & Eton District	A
Smethwick CB	†A
Snettisham	A1
Solihull UD	A
Somerset, County of	‡A1
Southampton and Eastleigh	A
Southend-on-Sea Dist.	A
Southport	A
South Shields CB	A
Southwold	A1
Spalding UD	A1
Stafford MB	A
Staines	A
Stamford MB	A1
Stantonwick	A
Stevenage	A
Stockport	A
Stockton RD	A
Stockton-on-Tees B	A
Stoke-on-Trent CB	A
Stoke Orchard	A1
Stourbridge MB	A
Stourport UD	A
Stowmarket	A1
Stratford-on-Avon MB	A
Stroud (RD Area)	A1
Sunderland CB	A
Sunningdale	A1
Sutton Coldfield MB	A
Swadlincote UD	A
Swaffham	A1
Swanage District	A1
Swansea	A
Swindon District	A
Swinton UD	A
Tamworth MB	A
Taunton	A1
Tavistock	A1
Tenterden	A2
Teignmouth	A1
Tewkesbury	A1
Thames Haven	A
Thetford	A1
Thirsk RD	A
Thorpe Bay	A
Thurrock UDC Area North of to Billericay	A
Tilbury	A
Todmorden MB	A
Tonbridge	A1
Torquay	A1
Totnes	A1
Tring	A1
Trowbridge	A1
Truro	A1
Tunbridge Wells	A1
Tynemouth CB	A
Ulverston	A
Uppingham (Salop)	A1
Uttoxeter RD	A1
Uttoxeter UD	A1
Wakefield CB	A
Wakefield RD	A
Walsall CB	A
Wallsend B	A
Walsden	A
Walton-on-Naze	A1
Ware	A
Warminster	A1
Warrington	A
Warwick MB	A
Wednesbury MB	A
Wellingborough UD	A
Wellington UD	A
Wellington (Somerset)	A1
Wells (Norfolk)	A1
Wells (Somerset)	A1
Welwyn	A
Welwyn Gar. City	A
West Bromwich CB	A
Westbury	A1
Westcliff-on-Sea	A
Westerham	A1
West Hartlepool CB	A
Westmorland (except Kendal)	A1
Weston-super-Mare	A1
Weybridge	A
Weymouth (including Portland Bill, excluding Portland Stoneyards)	A1
Whitby UD	A1
Whitby RD	A1
Whitehaven	A
Whitley & Monkseaton UD	A
Whitstable and District	A2
Wickford	A
Widnes	A
Wigan	A
Wigton	A1
Wilmslow	A
Wilts. County of	‡A1
Wimborne	A1
Wincanton	A1
Winchester	A1
Windermere	A1
Wisbech	A1
Witham	A1
Withernsea UD	A1
Woking	A1
Wokingham	A1
Wolverhampton CB	A
Wolverton District	A1
Woodbridge	A1
Woodhall Spa UD	A1
Woodstock	A1
Worcester CB	A
Workington	A
Worksop MB	A
Worthing	A2
Wrexham (incl. Cefn)	A
Wroughton	A1
Wylam	A
Wymondham	A1
Yate	A1
Yeovil Borough	A1
York CB	A
Ystalyfera	A

For Birkenhead, Liverpool and London the rates are:—Craftsmen, 4s. 5d.; Labourers, 3s. 10½d. In the case of London the rate beyond the 12-mile radius is: Craftsmen, 4s. 4½d.; Labourers, 3s. 10d. †Plus 2d. per working day. ‡This is the County rate and applies except where higher grades are stated.

NOTE.—Carpenters and Joiners providing own tools when employed in establishments operating under the Supplementary Rules for Woodworking Factories and Shops, receive 2d. per day; when employed on other building industry work, 4d. per day.

WOMEN'S RATES.—In all districts throughout the country the rate of wages for women engaged in craft processes is 3s. 5d. per hour. Women engaged on work other than craft processes, 3s. 1d. per hour.

For Building Trade Wages in Scotland see page 209.

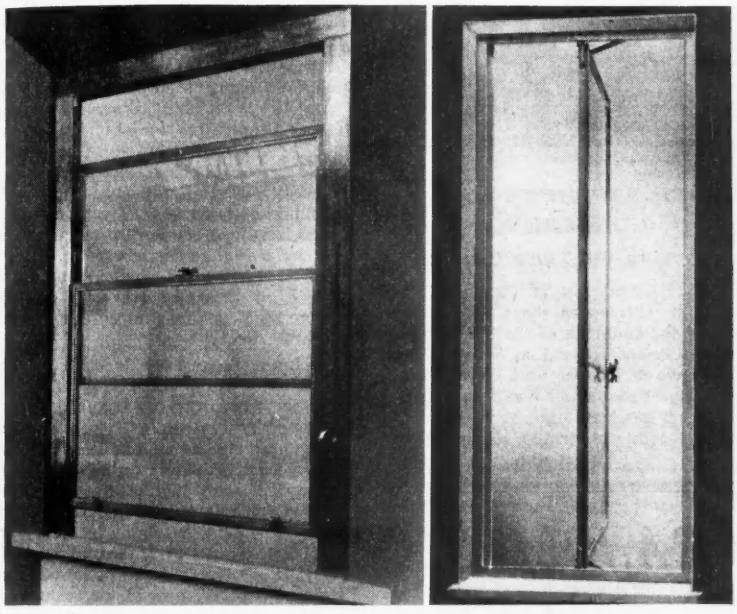
The Builder Review of PLANT & MATERIALS

Oil-fired Domestic Boiler

RECENTLY introduced by Cyril Kieft and Co., Ltd. (Oil Burner division), 13, Dudley-road, Wolverhampton, the Kieft-Stuttard fully automatic oil-fired boiler is claimed to provide all the hot water needed by the average household of four to five persons. The boiler is available in a choice of four models, operates on domestic fuel oil, and can be bought on hire-purchase.

Aluminium Windows

Leaflet No. 192, issued by Crittall Manufacturing Co., Ltd., of Braintree, fully describes the new double-hung sash of extruded aluminium, the Mark I. This window is a complementary one to the Mark II, which has spring balances, the Mark I has counter-weights and can be made as large as 8 ft. by 5 ft. The second illustration is of an aluminium side-projected window, which has the advantages that it is easy to clean and affords ample ventilation.



Aluminium windows by Crittall Manufacturing Co., Ltd.

Additions to Lighting Range

The following additions to their range of tungsten and fluorescent lighting fittings are announced by Philips Electrical Ltd., Century House, Shaftesbury Avenue, London, WC2. Industrial bi-pin ceiling channel fittings, designed for use with the 125w. 8 ft. fluorescent lamp which is rapidly gaining popularity for the lighting of large working areas such as machine shops, mills, etc. An industrial circular fluorescent fitting (A6425) for use with the 40w. 16-inch diameter MCF/U lamp. A commercial circular fluorescent diffuser fitting (A6430), also designed for use with the 40w. 16-inch diameter MCF/U lamp. A weatherproof tungsten floodlight for use with the 500w., 1000w. or 1500w. General Service Lamp, and industrial trough reflectors, for the 'Axminster,' 'Axbridge,' 'Aberdeen' and 'Auckland' fluorescent fittings.

Gunmetal Tube Joints

To meet the demand in a few areas where the local authorities are specifying gunmetal joints to minimise dezincification troubles, the 'Prestex' all gunmetal joint has been made by Peglers Ltd., Prestex House, Marshalsea-road, SE1. Delivery can be made from stock and the range includes ½ in.-1 in. fittings in all the popular patterns. Besides the body of the joint the coupling nut is made of gunmetal too, and the whole fitting complies with BS864 and is suitable for BS659 copper tube and plastic tubes to BS1372.

Clothes Storage

James Sieber Equipment Co., Ltd., of Africa House, Kingsway, London, WC2, produce a folder, 'Welfare Bulletin,' describing clothes storage by means of their metal framed hanger. Applications are suggested in factories, offices, schools, colleges, hospitals, clinics and so on.

TRADE NEWS

New Company

The British Oxygen Company Ltd., and George Wimpey, Ltd., have formed a jointly owned subsidiary to be known as British Oxygen Wimpey Ltd. The purpose of the new company is the construction of special rocket projects, and the wide experience of the two sponsors in major building contracts on the one hand and low temperature techniques for tonnage liquid gas on the other will enable all phases of a project to be dealt with within the new organisation. The Directors of British Oxygen Wimpey Limited are: Sir Godfrey W. Mitchell (Chairman), Mr. F. J. Clark, MSc., MIMechE., MIEE., Mr. R. U. Law, MICE, Dr. L. G. Groves, MSc., PhD., AMIChemE., MIIA, (Managing), Mr. G. M. Harvey, AMIMechE., Mr. D. R. W. Watts, BSc., (Eng.), Secretary, Mr. F. B. Eastwood. Registered Office, Bridgewater House, Cleveland Row, St. James's, London, SW1.

Factory Equipment Exhibition

Four months before the opening date, the 1957 Factory Equipment Exhibition, Earls Court, April 29-May 4, had a full quota of exhibitors. The fifth of a series, it will occupy 250,000 square feet.

Tubular-steel Brochure

A new brochure called 'Unimer Tubular Buildings for Agriculture and Industry' has been produced by United Merchants, Ltd. It is a practical guide to the construction of this type of building and has been designed to be used by structural engineers and architects.

PERSONAL COLUMN

THE RT. HON. R. R. STOKES, MP for Ipswich, chairman and managing director of Ransomes & Rapier, Ltd., and managing director of Cochran & Co. (Annan), Ltd., left London last week for Beirut and Baghdad.

In spite of having entered the loading shovel industry as recently as 1950, a continually expanding export turnover has necessitated the appointment by F. E. Weatherill, Ltd., of Welwyn Garden City, of MR. D. A. BISHOP as export manager.

British Insulated Callender's Cables, Ltd., announce the appointment of MR. C. MURRAY, BSc(Eng.), AMIEE, to be manager (overseas).

MR. W. PITKETHLY has been appointed manager of the Purchases and Supplies Department of the British Aluminium Co., Ltd., as from February 2 next, in succession to MR. R. L. C. MCDONALD, who retires on that date.

MR. ARNOLD CARR, assistant managing director of Thos. W. Ward. Ltd., Albion Works, Sheffield, left by air on January 9 for Australia and USA in connection with the Group's activities.

ALUMINIUM-PLASTIC THRESHOLD.—Introduced from America, this extruded section threshold contains three separate strips of vinyl plastic. One piece is under each of the edges to seal the metal strip to the existing threshold, the third is arched on top to provide a seal against the bottom rail of the door. Made in this country by Adams & Benson (Dalbukirk), Ltd., Albion, West Bromwich, Staffs, it is called the 'Duraflex' Threshold. The metal strip may be screwed to the existing surface, or it may be cast in with new work. The upper plastic sealing strip is replaceable

OVERSEAS BUILDING

Canadian Export Survey

THE Dollar Exports Council announces that in view of the continuing expansion of the Canadian constructional industry, it has organised a delegation to visit Canada in March to reassess the prospects of increasing British exports of building materials and allied products. Mr. Halford Reddish, chairman and managing director of the Rugby Portland Cement Co., Ltd., will lead the delegation; the other members are Mr. A. Atha, Mr. R. S. Jukes and Mr. H. E. Peirce. Mr. F. Davies, of the North American Department of the Federation of British Industries, will act as Secretary.

Queensland Housing Figures

More than 100,000 homes have been built in Queensland in the past ten years at a cost of £A.155m. In the same period, more that £A.52m. was spent on commercial buildings and another £A.50m. on alterations and maintenance. More than half the homes erected were built by private contractors without Government assistance, about a quarter by owner-builders and the remainder under Government sponsorship. At present, the Queensland building trade is employing the record number of nearly 24,000 workers.

CONTRACTS OPEN

***Australia.**—Tenders for a bulk sum contract are invited, from organisations with the necessary experience, for the manufacture, supply, installation, testing and maintenance of a sewage pumping plant for the Brooklyn Pumping Station to be constructed at Brooklyn. The works of the contract will comprise a pumping plant capable of pumping 250 million gallons of sewage per day (excluding standby capacity) against a head of about 150 feet, together with all pipework, valves and penstocks, screening equipment, the electrical installation and all ancillary equipment. Tenders should reach the office of the Secretary of the Board at or before 11 a.m. Tuesday, April 30, 1957. A copy of the specification and contract is available for inspection at the office of the Agent General for Victoria, Victoria House, Melbourne-pl., Strand, WC2. No further information about this call for tender is available at the Board of Trade. (Ref. ESB/899/57; tel.: Chancery 4411, ext. 738 or 771.)

***Ceylon** (ICA Procurement).—On November 9, 1956, the Export Services Branch issued a circular, TEN/22547, informing subscribers of a call for tenders issued by the Ministry of Lands and Land Development, Colombo, Ceylon, for the supply of buildings: aluminium sheeted. The branch is now informed that the specifications have been amended and the closing date for the receipt of tenders extended to February 25, 1957. A copy of the amended specification is available for inspection in Room 728, Lacon House, Theobalds-road, WC1. An additional copy is available for loan in order of application. Ref. ESB/28503/56/ICA (tel.: Chancery 4411, ext. 360).

***Madras.**—The UK Trade Commissioner at Madras has advised the Export Services Branch that in the Madras State second five-year plan the following provisions have been made for water supply, sanitation and drainage schemes: (a) To provide water supply and sanitation to villages with a population of less than 5,000 affected by cholera at a total cost for the five years of Rs. 120 lakhs); (b) to provide water supply and drainage in municipal and other urban areas, excluding Madras City, at an estimated total cost, over five years, of Rs. 200 lakhs. The Superintending Engineer (Public Health), Public Works Dept., Madras, is particular that UK firms who wish to tender should have agents in India to whom he could pay for the supplies in Indian rupees. For details ref. ESB/1282/57 (tel.: Chancery 4411, ext. 776).

*** From the Board of Trade Special Register Information Service. The telephone number and extension at the end of the paragraphs relate to the department of the Export Service Branch, Lacon House, Theobalds-road, WC1, where further information can be obtained.**

AGENCIES WANTED

***South Africa.**—Mr. John Elias, managing director of John Elias (Pty.), Ltd., 1 J.B.S.-building, Main-street, Port Elizabeth, who is in this country until the end of January, wishes to meet manufacturers desirous of appointing an agent for the Eastern Province (with particular reference to Port Elizabeth and East London), and the Border and Transkei regions of South Africa. Mr. Elias wishes us to draw attention to the desirability of appointing a separate agent for this territory, for which he can offer direct representation. Builders' hardware is one of the commodities in which he is particularly interested. Reference ESB/23030/56 (tel.: Chancery 4411, ext. 693).

***USA.**—Mr. Sam Powers, Director of Procurement, Norwest Plumbing and Heating Supply Company, 14555, Meyers-road, Detroit 27, Michigan, has told the British Consulate at Detroit that his firm are seeking exclusive distribution for the United States, or at least the midwest area, for vitreous china bathroom fixtures, or any other items in the sanitary ware field which are made in the United Kingdom. The firm are primarily interested in lavatories and closet combinations. A brochure showing the types of fixtures required is available for inspection in Room 805, Lacon House, Theobalds-rd., WC1. The US firm wish to have direct contacts with United Kingdom manufacturers. Ref. ESB/811/57 (tel.: Chancery 4411, ext. 776).

INTER-AMERICAN CENTRE CONFERENCE

Housing and Town Planning

THE ORGANISATION of American States which, in addition to the USA, comprises most of the countries of Central and South America, recently held a First Technical Conference on Housing and Town Planning.

The report shows among other things that: (a) Bogota has been fixed as the permanent seat of the Inter-American Housing Centre. (b) The Centre will run short and long courses, conduct research and give advice to all American States. (c) The conference has recommended to the Inter-American Economic and Social Council that $100,000 be allocated for the study of the possibility of an 'Inter-American Corporation for the Financing of Housing of Social Interest.' This would involve the establishment of a common market for mass produced construction materials. (d) The conference favours the local prefabrication of construction units using the most economic materials locally available, as a means of reducing building costs.

A copy of this report (ref. ESB/1161/57) can be borrowed by firms for a short period strictly in order of application from The Export Services Branch of the Board of Trade, Room 805, Lacon House, Theobalds-rd., WC1.

GRANOLITHIC
SCREEDING
CONCRETE FLOORS

We are in a position to commence contracts at short notice

MALCOLM MACLEOD & CO. LTD.
GLEN ROAD, E.17
Coppermill 1147

REINFORCED CONCRETE IN BUILDINGS

Durability Established

TWO reports published on January 11 by HMSO deal with the history of reinforced concrete in buildings, and with its durability.* In 1954 a survey was undertaken, jointly by the Building Research Station and the Cement and Concrete Association, to collect evidence concerning the durability of reinforced concrete in parts of buildings exposed to the weather. Upwards of 50 buildings, some of them over 50 years old, were selected for inspection. The findings of the survey are presented in the second of these reports, with conclusions and recommendations for ensuring durability in future work.

Reinforced concrete being a man-made material of comparatively recent introduction, there has been continuous development in its design and use. To provide a background to the results of the survey, therefore, the first report outlines the relevant stages of development. It traces the advance of ideas on reinforced concrete construction from a tentative beginning in the middle of the nineteenth century, through its development on the Continent to its introduction to Britain about the turn of the century.

From then on, the methods introduced as experience grew are traced largely through the Reports, Regulations and Codes of Practice to which British designers have conformed, noting particularly the introduction, or omission, of procedures that have had an important influence on durability.

The main conclusion drawn is that reinforced concrete is fundamentally a suitable material for permanent building, since in some buildings it has lasted for upwards of 50 years without requiring any special maintenance. While in some situations—at the seaside, or in gas works or certain types of chemical works—surface protection or periodic maintenance may be necessary, all other instances of deterioration found on the survey were attributable to defects of design or construction that could be avoided.

*(1) National Building Studies Special Report No. 24, 'A Note on the History of Reinforced Concrete in Buildings.' Price 3s. 6d. (2) National Building Studies Special Report No. 25, 'The Durability of Reinforced Concrete in Buildings.' Price 3s. 6d. Both are published by HMSO for DSIR.

The SCOTTISH BUILDER

Exchequer Grants Reduced

CONTRIBUTIONS by local authorities to the annual cost of housing exceeded Government grants for 1955-56, states the 'Rating Review, 1956' issued by the Scottish Branch of the Institute of Municipal Treasurers and Accountants (Inc.). In an introduction to the review, Mr. G. R. B. MacGill, chairman, and Mr. A. A. Watt, hon. editorial secretary, say that local authorities met 31.5 per cent. of the cost of housing in 1955-56 the Exchequer 29.5 per cent., and tenants 38 per cent.

In 1954-55 Exchequer subsidies for housing amounted to £7,666,000 and rates subsidies to £7,600,000. Last year Exchequer subsidies amounted to almost £8,570,000, whereas the rates subsidies totalled about £9,190,000, an increase of about £620,000.

Cottage to be Converted

AN OFFER by a local contractor to convert the old whitewashed cottage beside Kirkcudbright Harbour into an art gallery and exhibition room for £1,245 has been accepted by the executive committee. The cottage was threatened with demolition until recently when a Kirkcudbright group of artists and business people decided to save it. The Scottish Historical Buildings Council gave a grant of £100 and local subscriptions so far total £861.

Building Materials by Helicopter

ELEVEN tons of sand, cement, gravel and timber were successfully transferred from Arrochar by helicopter to a broken pipeline 1,000 ft. up on the side of the Cobbler above Loch Long on January 7.

The pipeline was severed by a landslide on December 5 and resulted in a loss of some four per cent. of normal flow from Loch Sloy. The two-in-one gradient made the location inaccessible by normal transportation methods and the prospect of heavy snows demanded sealing of the break at the earliest possible date. The first air lift had to be abandoned owing to adverse weather but the January 7 attempt was completed successfully despite very severe winds which made the lifts hazardous.

Each load was released during the momentary touch-down on the hillside and in all 11 tons of building material were successfully carried over the day, each trip involving five minutes of air travel. The helicopter was a Bell-Augusta owned by Helicopter Services Limited, of Derby.

NEW BUILDINGS

Dumbartonshire.—Plans prepared for over 150 houses at Clydebank Faifley site. J. Austen Bent (A), 15, Palmerston-pl., Edinburgh 12.

Edinburgh.—Plans approved for primary schools at Silverknowes, West Pilton, Southhouse and Burdiehouse. A. Steele (A), Municipal-bldgs., Parliament-sq.

Greenock.—Plans in hand for 550 houses at Larkfield housing site. J. Austen Bent (A), 15, Palmerston-pl., Edinburgh 12.

Glasgow.—Plans prepared for Lyon, Ltd. (trading as Lawrence of Partick), Accountancy Hall, West Regent-st., for extensions at Dumbarton-rd. Gillespie, Kidd & Coia (F/A), 20, Park-circus, WC3.

Glasgow.—Corporation has appointed Quantity Surveyors for two junior colleges at Barmulloch. John Danskin & Purdie (F), 241, West George-st., Anniesland; D. M. Doig, Crone & Smith (F), 114, Wellington-st.

Glasgow.—Plans in hand for ballroom buildings for W. K. Gibb, 1487, Great Western-rd., Anniesland.

Glasgow.—Plans prepared for the Church of Scotland, Edinburgh, for parish church at Barlia-ter. A: W. N. Ramsay (A), 11, Park-circus, WC3.

Glasgow.—Plans prepared for Hugh Smith & Co., Ltd., Possil Engine Works, for extensions to factory at Hamiltonhill-rd. Frank Burnett, Boston & James Bell (F/A), 180, Hope-st., WC2.

Glasgow.—Corporation has appointed A. B. Campbell (F/A), 124, St. Vincent-st., WC2, architect for 340 houses to be erected at Queenslie site Unit No. 8.

Glasgow.—Plans prepared for J. Lucas & Co., Ltd., Great King-st., Birmingham, for buildings at 4-24, Grant-st. A: Clifford Tee & Gale (F), 43, Frederick-st., Birmingham.

Glasgow.—Plans prepared by own engineers for blocks of buildings, including canteen, at Dalmarnock for Mavor & Coulson, Ltd., Swanston-st., Bridgeton, EC3.

Lanarkshire.—Plans prepared by their own staff at 107, West Regent-st., WC2, for 29 houses at Simshill housing site, Cathcart, by Mactaggart & Mickle, Ltd.

Lanarkshire.—Plans prepared for new hotel at Lanark-rd., Forth, for J. B. Macalpine, 15, George-st., Armadale.

Lanarkshire.—Plans approved for 21 houses, 9, shops, 5 workshops and 12 lock-up garages to be erected at The Murray, East Kilbride. F. Scott (L), Torrance-hse., East Kilbride.

Renfrewshire.—Plans in hand for 50 houses on the Neisston site. J. Austen Bent (A), 15 Palmerston-pl., Edinburgh 12.

Strathavon.—Plans approved for Protestant prim. sch. at Goodsburn. W. R. Watt, Albert-st., Motherwell, Wishaw.

SCOTTISH BUILDING TRADE WAGES

FOLLOWING are rates of wages authorised by the Scottish National Joint Council as from April 16, 1956. They apply to the whole of Scotland, including the islands of Orkney, Shetland, etc.

Grade A: Craftsmen 4s. 3½d.; Labourers 3s. 9d.

For apprentices, the rates are:

Year.	Percentage of Craftsman's rate.	For week of 44 hours. s. d.
1st	25	47 2½
2nd	33⅓	62 11½
3rd	50	94 5
4th	66⅔	125 10½
5th	75	141 7½

For female labour, the rates are:

	s.	d.
Operatives on craft operations (at end of probationary period)	3	9
Operatives on labouring operations (at end of probationary period)	3	5½

A New Builder Publication

BURST PIPES

CAUSATION AND CURE

By

D. DEX HARRISON

F.R.I.B.A., A.M.T.P.I.

PRICE - - 1/6d.

BY POST - 1/9d.

THE BUILDER

BOOK DEPARTMENT

4 Catherine St., Aldwych, W.C.2

TEMple Bar 6251/4 Ext. 5

NEW COMPANIES

THE FOLLOWING NEW COMPANIES, registered in England, have been announced by Jordan and Sons, Ltd., company registration agents.

Backhouse & Mark, Ltd. (573476.) Regd. Oct. 26. 32, Cookridge-st., Leeds, 1. Bldrs. Nom. cap.: £500. Dir.: K. Mark.

F. Britten & Son, Ltd. (573317.) Regd. Oct. 24. Prudential-chmbrs., 460a, Fore-st., N9. Bldrs. Nom. cap.: £100. Dir.: F. Britten.

D. Crosdil & Co., Ltd. (573313.) Regd. Oct. 24. 44, Woodgrange-close, Kenton, Middx. Bldrs. Nom. cap.: £1,000. Dir.: D. J. J. Crosdil.

Wm. Heath, Ltd. (573280.) Regd. Oct. 23. Crosswood, Dukes Wood-dr., Gerrards Cross, Bucks. Bldrs. Nom. cap.: £500. Dir.: A. W. E. Heath.

A. A. Wayne & Co., Ltd. (573238.) Regd. Oct. 23. 1a, Lance-gr., Liverpool, 15. Bldrs. Nom. cap.: £100. Dir.: A. A. Wayne.

Winson Bros., Ltd. (573219.) Regd. Oct. 22. 69, Heath-dr., Gidea Park, Romford, Essex. Bldrs., etc. Nom. cap.: £5,000. Dir.: K. Winson.

Masons (Plaistow), Ltd. (573025.) Regd. Oct. 17. 614, Green-la., Goodmayes, Essex. Bldg. contrs. Nom. cap.: £1,000. Dir.: Anne Mason.

Mathew J. Twomey & Co. (Builders), Ltd. (573026.) Regd. Oct. 17. 19, Dumfries-pl., Cardiff. Nom. cap.: £1,000. Dir.: M. J. Twomey.

A. S. Leedham & Co. (Nuneaton), Ltd. (573061.) Regd. Oct. 18. 20, Richmond-rd., Nuneaton. Bldrs., contrs. Nom. cap.: £1,000. Dir.: A. S. Leedham.

A. Coleman (Builders), Ltd. (573106.) Regd. Oct. 18. Nom. cap.: £500. Dir. A. Coleman., 35, New-st., Queniborough, Leics.

Woodlands Development Co., Ltd. (572983.) Regd. Oct. 16. 70, Old Broad-st., EC2. Bldrs. Nom. cap.: £100. Dir.: G. M. Garland.

Bordom Building Co., Ltd. (572999.) Regd. Oct. 17. 156, Strand, WC2. Nom. cap.: £100. Sub.: Jean Herbert (co. dir.). The following companies were registered on the same date, with particulars similar to Bordorm Building Co., Ltd.:—Bowervil Building Co., Ltd. (573000.) Concourse Building Co., Ltd. (573002.) Cremorne Building Co., Ltd. (573003.) Eagellvil Building Co., Ltd. (573004.) Golfall Building Co., Ltd. (573010.) Golmor Building Co., Ltd. (573011.) Gloucestervil Building Co., Ltd. (573012.) Holly Lane Building Co., Ltd. (573015.) Onhills Building Co., Ltd. (573030.) Blakorne Building Co., Ltd. (573039.) Hallmoor Building Co., Ltd. (573044.) Littlepoint Building Co., Ltd. (573047.) Morcon Building Co., Ltd. (573048.)

C. G. Batchelor & Son, Ltd. (572987.) Regd. Oct. 16. 65, Fareham-ave., Rugby. Bldrs. Nom. cap.: £5,000. Dir.: G. G. Batchelor.

E. W. Kingsbury & Sons, Ltd. (572953.) Regd. Oct. 16. Pottery-rd., Parkstone, Dorset. Bldrs., etc. Nom. cap.: £15,000. Dir.: T. F. Kingsbury.

Basil Wyatt & Sons, Ltd. (572941.) Regd. Oct. 16. 51, Sunderland-ave., Oxford. Bldrs. Nom. cap.: £3,000. Dir.: B. Wyatt.

Jupiter Construction Co., Ltd. (572918.) Regd. Oct. 15. 40, Mortimer-st., W1. Bldrs. Nom. cap.: £100 in £1 shares. Sub.: R. Dunsby.

The Builder

FUTURE CONSTRUCTION

Full details of Public Appointments open will be found in the Advertisement pages of this and previous issues.

CONTRACTS OPEN

For some contracts still open but not included in this list see previous issues. Those with an asterisk are advertised in this number. The dates at the heads of paragraphs are those for the submission of tenders; a dagger (†) denotes closing date for applications; the name and address at the end refer to the person from whom particulars may be obtained.

BUILDING

JANUARY 28.

***Stretford BC.**—Sub-contractors work for new buildings, Longford-rd. highways depot. BS. Dep. £2 2s.

JANUARY 29.

***†Birmingham City C.**—26 dwellings, Masshouse-la., Kings Norton. City A. Dep. £2 2s. Tenders February 26.

JANUARY 30.

***†Leeds Regional Hospital Board.**—Extensions, Regional Blood Transfusion centre, Bridle-path, York-rd., Seacroft. A to Board, Park-parade, Harrogate. Dep. £2 2s. Tenders by February 25.

JANUARY 31.

***Ealing BC.**—Convenience, Hanger Hill Park. BE. Dep. £2.

***Edinburgh City C.**—Multi-storey blocks of houses. City A.

***†Gloucestershire CC.** — New secondary modern school, Charlton Kings. Cty. A, Gloucester.

***†North-East Metropolitan Regional Hospital Board.**—New boiler house at St. Andrew's Hospital, Devons-rd., Bow, E3. Secretary to the Board, 11a, Portland-pl., W1.

***†North-East Metropolitan Regional Hospital Board.**—Adaptation of part 3 accommodation at St. Mary's Hospital, Colchester. Secretary to the Board, 11a, Portland-pl., W1

FEBRUARY 1.

***Lichfield City C.**—Approved list of building contractors. City E., 62, Wade-st.

***Lichfield City C.**—Approved list of civil engineering contractors. City E., 62, Wade-st.

FEBRUARY 2.

***†Plymouth City C.**—Reconstruction, Guildhall. City A., Seymour-rd. Dep. £3 3s.

FEBRUARY 4.

***†East Lancashire Territorial and Auxiliary Forces Assn.**—Demolition, levelling, etc., hutted camp site, Sheepfoot-la., Heaton Park, Prestwich, near Manchester. S., 30, Crompton-st., Bury.

***†Essex CC.**—Secondary school Tye Green South, Harlow. County A., Chelmsford.

***Wolverhampton CB.**—Classrooms, Northicote secondary modern school, Bushbury. BE. Dep. £2 2s.

FEBRUARY 5.

***†Northamptonshire CC.** — Court house, Corby. Cty. A, Northampton.

FEBRUARY 6.

***†Norfolk EC.**—Four classrooms at North Walsham sec. mod. sch. Chief Ed. Officer, Education Office. Stracey-rd., Norwich.

FEBRUARY 7.

Newcastle-upon-Tyne City C.—Seven old people's dwellings at Kenton North estate. City A.

***Reigate BC.**—33 houses, Rushetts Farm estate. BE&S. Dep. £2 2s.

FEBRUARY 8.

***†East Sussex CC.**—Phase I Halford Park county primary school, East Grinstead. County A., Lewes.

***†Hants CC.**—Additions to two schools. County A., Winchester.

***Leyton BC.**—Relining two incinerator furnaces, Auckland-rd. depot. BE&S. Dep. £2 2s.

***†West Riding CC.**—Adaptation and extension of the building and provision of playground and site works at Lady E. Hasting's CE sch., Collingham. Deputy County A. Dep. £2 2s. Tenders by March 18.

FEBRUARY 11.

Newcastle upon Tyne Corpn.—Adaptation of tech. training sch. at Royal Victoria School for the Blind, Benwell-la., as basket-making dept. for adult blind. City A.

***Wanstead-Woodford BC.** — Additions to cottage, Western sewage works, Chingford Hatch, E4. BE&S. Dep. £2.

FEBRUARY 13.

***Luton BC.**—Final sections of Stopsley county secondary school. Boro' A. Dep. £2 2s.

FEBRUARY 16.

Bradford CC.—17 aged persons' dwellings and recreation centre, with site works, at Thorpe Edge estate. City E&S Dep. £2 2s.

FEBRUARY 18.

***Flints. CC.**—Extension, Grammar School, Denbigh-rd., St. Asaph and new school, Bodelwyddan. Cty. A, Llwynegrin, Mold. Dep. £3 3s. each.

***Flints. CC.**—New school at Hope, Connah's Quay and Gwernymynydd. Cty. A, Llwlnegrin, Mold. Dep. £3 3s. each.

New Sarum City C.—26 dwellings at Bishopdown estate, Salisbury. City E, Council House, Bourne Hill, Salisbury. Dep. £2.

***Worcester TC.**—24 dwellings at Little Park-st. City E&S. Dep. £3 3s

FEBRUARY 19.

***Bournemouth CB.**—Contract WH 18 (D), 9 pairs of houses; contract WH 22, 2 pairs of bungalows and 9 pairs of houses. Both on West Howe estate. Boro' A. Dep. £2 2s. each.

FEBRUARY 25.

***Finchley BC.**—Reconstruction of Tally Ho convenience, N12. BE&S, 294-296, Regent's Park-rd., N3. Dep. £2.

FEBRUARY 26.

***Ilford BC.**—4 houses, Roden-st. pumping station. BE&S.

FEBRUARY 27.

***Ealing BC.**—Club premises, Perivale. BE. Dep. £2.

***Northfleet UDC.**—17 bungalows and 16 flats, Painters Ash estate. E&S. Dep. £2 2s.

MARCH 12.

***Hants CC.**—Junior and infants schools, Yateley & Barton Stacey. County A, Winchester.

BROUGHTON MOOR

Light Sea Green and Olive Green Stone

An all British Product from the Lake District Mountains

The following pamphlets are available on request

No. 1 FLOORING • No. 2 FACINGS • No. 3 COPING

No. 4 CILLS • No. 5 RIVEN FACE SLABS

THE BROUGHTON MOOR GREEN SLATE QUARRIES LTD

CONISTON, LANCS. Tel.: CONISTON 225

NO DATE.

***Herts CC.**—List of contractors for building and maintenance works, heating and electrical works. C. Hertford.

***N. E. Metropolitan Regional Hospital Board.**—New out-patients dept., North Middlesex Hospital, Silver-st., N18. Sec., 11a, Portland-pl., W1.

PAINTING, MATERIALS, ETC.

JANUARY 31.

***†Wimbledon BC.**—External repainting of Town Hall and Public Hall. BE&S, Town Hall. Dep. £2 2s.

FEBRUARY 4.

Ashton-under-Lyne BC.—Road materials. Boro' S.

Brighouse BC.—Road materials. Boro' E.

Gosport BC.—Road materials. Boro' E.

Wolverhampton CBC.—Building and road materials. Boro' E.

FEBRUARY 7.

Metropolitan Water Board.—Building materials. Ch. E.

FEBRUARY 8.

Bolton CBC.—Road and building materials. Boro' E&S.

Chelmsford BC.—Road materials. Boro' E&S.

FEBRUARY 9.

Halifax CBC.—Road and building materials. Boro' E.

King's Lynn BC.—Road materials. Boro' E.

Whitworth UDC.—Road materials. E&S.

FEBRUARY 11.

Dewsbury CBC.—Road materials. Boro' E.

Swadlincote UDC.—Road materials. E&S.

Warrington CBC.—Building and road materials. Boro' E&S.

FEBRUARY 13.

Rugby BC.—Road materials. Boro' S.

FEBRUARY 16.

Atherton UDC.—Road materials. S.

Caernarvonshire CC.—Road materials. County S.

Eastbourne CBC.—Road and building materials. Boro' S.

FEBRUARY 22.

Morecambe and Heysham BC.—Road materials. Boro' E.

FEBRUARY 28.

Padiham UDC.—Road materials. S&WE.

MARCH 1.

***Rickmansworth UDC.**—External painting and repairs to 201 houses. E&S. Dep. £2 2s.

MARCH 7.

Darlaston UDC.—Road and building materials. E&S.

MARCH 8.

Colne Valley UDC.—Road materials. S.

MUNICIPAL AND CIVIL ENGINEERING WORKS, ETC.

FEBRUARY 5.

†Herne Bay UDC.—Inclusion in selected list for reconstruction of May-st. sewage disposal works.

FEBRUARY 6.

New Windsor BC.—Clewer relief sewer—1,150 yd. of 18 in. to 27 in. concrete sewer, with 16 manholes, etc. Boro' E.

Prestwich BC.—800 lin. yd. of 36 in. and 33 in. concrete pipe sewer, manholes, etc., at Clifton-rd. Boro' E&S. Dep. £5 5s.

Stoke-on-Trent CC.—Preliminary street works and sewers at Honeywall housing estate, Penkhull New-rd. City E&S. Dep. £3.

Wandsworth MBC.—5,000 super yd. road work and 381 lin. yd. 4 in.-9 in. sewers at West Hill housing estate. Boro' E. Dep. £2 2s.

FEBRUARY 8.

Maidenhead BC.—1,000 lin. yd. 6 in., 18 in. and 24 in. dia. SW sewer, manholes, etc. Boro' E&S. Dep. £2.

Rickmansworth UDC.—Widening of 600 lin. yd. of Berry-lane. E&S. Dep. £2 2s.

FEBRUARY 11.

Lexden and Winstree RDC.—920 yd. of 9 in. dia. sewers, manholes and small sewage disposal works at Eight Ash Green. Elliott & Brown, Ccl's. constg. engrs., Stanley-hse., Pelham-rd., Nottingham. Dep. £3 3s.

Oswestry BC.—Advanced preparation of housing site at Shrewsbury-rd.—1,460 lin. yd. 6 in. and 9 in. sewers, 116 lin. yd. 24 in. dia.

culvert and pitching and kerbing of 460 yd. length of roadway. Boro' S. Dep. £2 2s.

Cheshire CC.—500 yd. of new 33 ft. carriageway and regrading of 200 yd. existing carriageway, etc. County S. and Bridgemaster. Dep. £5 5s.

FEBRUARY 18.

Nantwich RDC.—Sewage disposal works at Haslington. Ward, Ashcroft & Parkman, Ccl's. constg. engrs., 38, The Temple, Dale-st., Liverpool, 2. Dep. £5 5s.

FEBRUARY 22.

Staines UDC.—Road works annual contracts. E&S. Dep. £2 2s.

GENERAL BUILDING WORK

(LONDON)

Camberwell.—SCHOOL IMPROVEMENTS.—The Education Com. of the LCC proposes alterations and improvements to Collingwood county secondary school at an estimated cost of £20,585.

Camberwell.—DWELLINGS.—The MBC has approved a provisional scheme for the redevelopment of the Acorn-place area, bounded by Meeting House-la., Carlton-grove and Queen's rd., Peckham, by 518 dwellings.—A further 100 dwellings, including a tall block and possibly some shops, are proposed to be erected on the Mansion-st./Wesson-sq. site between the railway line and Camberwell-rd. and negotiations for the purchase of premises within the area are proceeding. The estimated cost of acquisition, clearance and partial development is £100,000. The Boro' Architect is F. O. Hayes (A).

Camberwell.—SITE ACQUISITION.—A permanent housing site at Elmington-rd./Benhill-rd. is to be acquired by the MBC for £1,130.

Chelsea.—HOSTEL.—The LCC Welfare Com. has approved a scheme for the adaptation of St. George's Home, Milman's-st., SW10, as a hostel for women. The estimated cost of the building work is £19,400.

Deptford. — REDEVELOPMENT. — The LCC Housing Com. proposes the acquisition for housing purposes of two sites at Lewisham Way having a total area of 1¼ acres, on which it is estimated that about 40 dwellings can be erected.

Hackney.—FLATS, MAISONETTES AND COMMUNAL BUILDINGS.—The Housing and TP Com. submits proposals for the development of three sites in the Lansdowne-drive area. The Gayhurst-rd. site, comprises the whole of the area bounded by Gayhurst-rd., Lansdowne-drive, Richmond-rd. and London Fields West side, with the exception of the premises of the London Fields Fellowship. The Albion-drive site is a large area mainly occupied by temporary bungalows and lies south of Middleton-rd. and west of Lansdowne-drive. On these two sites it is proposed to erect a 12-storey block of 46 flats, 68 maisonettes in four-storey blocks, 16 lock-up garages, two communal laundries, a community hall, a chapel of rest and porters' and tenants' workshops, at an estimated cost of £304,000. On the Middleton-rd. (No. 2) site, which is on the north side of Middleton-rd., near the corner of Lansdowne-drive, it is proposed to erect a 12-storey block of 46 flats, 80 maisonettes in four-storey blocks, and 12 lock-up garages at an estimated cost of £332,000. The Boro' E&S and Director of Housing Development is G. L. A. Downing, OBE, MICE.

Hammersmith.—REDEVELOPMENT.—The LCC Housing Com. proposes to acquire certain properties in the Butterswick Cottages area and adjoining lands, which, with land already in the Council's possession, will provide a site of about 1¾ acres, on which it is estimated that 49 dwellings can be erected.

Islington.—SITE ACQUISITION.—The LCC Housing Com. proposes the acquisition for housing purposes of a site of nearly 9¼ acres at St. Mary's-grove, on which, by a combined scheme for rehabilitation and redevelopment, it is estimated that about 263 dwellings could be provided.

Lambeth.—FLATS.—The LCC Housing Com. has approved a scheme for the erection of a three-storey block of 36 flats on a site of about four-fifths of an acre at Flaxman-rd., SE5, adjoining the Council's Lilford estate. The estimated cost of the scheme is £104,900.

Leyton.—FLATS AND MAISONETTES.—Bills of quantities are being prepared for nine blocks containing 94 flats and maisonettes on three, four and five storeys on the Ive Farm, Church-rd., site. The dwellings will be of load-bearing wall construction roofed with low-pitched built-up felt. The Boro' E&S is H. D. Peake, MSc(Eng), AMICE, MIMunE, and the quantity surveyors are Spriggs and Ptnrs., 2, South Audley-st., W1.

Paddington.—SCHOOL ADDITIONS.—The LCC Education Com. has approved a scheme for the provision of four additional classrooms at Hallfield county primary school estimated to cost £23,815. The architects are Fry, Drew, Drake & Lasdun (F/F), 63, Gloucester-place, Portman-sq., W1.

Poplar.—MAISONETTES AND FLATS.—The LCC Housing Com. has approved a scheme for the development of an area of six acres to the south of the Council's main drainage depot at Wicks-la., between Parnell-rd. and the railway, by a 16-storey block of flats overlooking Victoria Park, three four-storey blocks mainly of maisonettes, a two-storey terrace of flats for old people and a three-storey block of shops with flats over. In all, there will be 112 maisonettes, 16 dwellings for old people, 67 flats, 17 garages, 89 tenants' stores, an estate workshop, a double-unit shop and a childrens' playground. The estimated cost of the scheme is £590,700.

St. Marylebone.—SLUM CLEARANCE.—The Housing Com. proposes the redevelopment of six small sites, some four acres in total extent. The BC is to ask to be allowed to build to an increased density in the Lisson-grove area and alternative schemes have been prepared as follows:—

At prescribed densities Site	No. of dwellings	Total estimated cost £
17/24, Ashbridge-st	12	35,265
8/20, Newcourt-st	28	78,025
9/15, Cochrane-st.	13	35,240
Freshwater-place	16	49,640
Broadley-st.	16	46,695
Mulready-st.	118	353,290
Total	203	£598,155
Alternative Schemes:		
9/15, Cochrane-st.	16	43,500
Broadley-st.	20	57,425
Mulready-st.	174	484,390
Alternative total	266	£748,255

The Housing Director is H. C. Hampton, FRICS, AMICE, FIHsg.

Designs for the Smaller Home

A selection of Plans and Photographs of Architect Designed

SMALL HOUSES and BUNGALOWS

Price 5/- • By Post 5/6

Book Dept.

THE BUILDER LTD.

THE BUILDER HOUSE
ALDWYCH, W.C.2 • TEMple Bar 6251/4

St. Marylebone. — APPOINTMENT.—H. M. Miller, FRICS, 88a, St. John's Wood High-st., NW8, is recommended for appointment as quantity surveyor for the Abercorn-place/Violet Hill housing scheme.

Shoreditch.—SCHOOL IMPROVEMENTS.—The LCC Education Com. has approved a scheme of alterations at Burbage county primary school to provide modern classrooms for specialist instruction in garment trades subjects for girls to be transferred from the Shoreditch college for the garment trades on the opening of the new Shoreditch (county secondary) school. The estimated cost is £16,555.

Shoreditch — SCHOOL IMPROVEMENTS. — A scheme for alterations, extensions and improvements to Hugh Myddleton county secondary school prepared by Architects Co-Partnership (A/A), 44, Charlotte-st., W1, and estimated to cost £42,727 has been approved by the LCC Education Com.

Walthamstow.—APPOINTMENTS.—The undermentioned quantity surveyors have been appointed for the schemes stated: Ball & Ptnrs., Cecil-rd/Knebworth-av., 1/13, Prospect Hill, 52/58, The Drive, 16/18, Prospect Hill, Frederick-st./Grange-rd., and Whipps Cross. F. G. Cox, Manor-rd., land adjoining "The White Swan," Wood-st., Oatland Rise (second stage), and 129/135, Wood-st.

Westminster—EMBASSY.—Demolition of the existing American Embassy in Grosvenor-sq., W1, will begin in March and is expected to take two months. Construction of the new building, designed by Mr. Eero Saarinen, is expected to begin towards the end of June. The consultant architects are F. R. S. Yark, E. Rosenberg & C. S. Mardall (F/F), 2, Hyde Park-place, W2.

(PROVINCIAL)

Alnwick.—Work to start in spring on erection of sec. mod. sch. nr. Blakelaw-rd., to cost £46,000 and new St. Mary's Convent grammar sch. A: Reavell, Cahill & Cahill (F/F), Lloyds Bank-chmbrs., Alnwick.

Ashton-under-Lyne.—EC proposes erection of new covered accommodation at Mossley-rd. Bus Depot, £25,000 est.

Bacup.—M of E approved inclusion in 1957/58 programme of new St. Mary's RC sch. at Fairview, Tong-la.

Blackpool.—RC Authorities propose new prim. jun. sch. off Seacrest-ave. A: C. E. Jackson (L), 73, Harrington-ave.

Blyth.—Newcastle-on-Tyne Regional Hospital Board is being asked to provide additional accommodation for patients at Beulah House Maternity Home. Board's Ch. A: P. H. Knighton, MBE (A), Benfield-rd., Newcastle-on-Tyne.

Bristol.—HC plans to complete 1,198 new dwellings in 1957, including 450 at Stockwood, 371 at Stockwood Withywood, 23 at Eastwood-cres., 11 at Falcondale-rd., four at Hartcliffe, 42 houses and 48 flats at Henbury, 193 at Lawrence Weston and 56 at Redcliffe.

Bury.—TC proposes 70 houses at Seedfield.

Carlisle.—EC is planning erection of dining-room and two hutted classrooms at Upperby School.—City C to submit to Ministry estimate of £73,000 prepared by City E (L. J. A. Stowe) for proposed Stanwix sewerage scheme. Ccl. is urging Ministry to sanction start on construction of second stage of Morton outfall sewer scheme.

Clayton-le-Moors.—Territorial Assn. proposes new drill hall on site of Canal Mill.

Consett.—Existing grammar sch. to be adapted as part of first instalment of scheme for new College of Further Education, at cost of £32,000, for Durham CC. County A: G. R. Clayton, South-st., Durham.

Doncaster.—BC proposes new police building adjacent to Guildhall.—To invite Gregory Housing, Ltd., to submit scheme for three-storey flats at Parkway North.

Dudley.—A. & J. Mucklow and Co., Ltd., Sedgley, propose erection of new housing estate on site to east of Mons Hill.

Durham.—County A to prepare plans for village halls at Swalwell, Winlaton and Springwell, for CC, £10,000 each est.

East Sussex. — EC approved following schemes:—East Grinstead county sec. sch., £200,000; Claverham county sec. sch., Battle (Phase II), £44,203; Newhaven county sec. sch. (1st instalment), £113,309; improvements to Hurst Green CE sch., £11,000; and additions and improvements to Mountfield and Whatlington CE sch., £11,800.

Felling, Co. Durham.—UDC to incorporate four-storey flats in Wellington-st. redevelopment scheme. UDC has approved in principle scheme for erection of swimming baths at Leam-la. estate. A: J. H. Napper & Ptnrs. (F), Eldon-pl., Newcastle-on-Tyne.—UDC approved layout plans, submitted on behalf of Gateshead Corpn. for 150 houses at Leam-la. estate. A: George H. Gray & Ptnrs. (F/A), Portland-terr., Newcastle-on-Tyne.—Gateshead Industrial Co-op. Socy, Ltd., Jackson-st., Gateshead, are to commence work before June on erection of shops at main shopping centre, and on Stage 6 of Leam-la. estate.—Felling Industrial Socy, Ltd., Coldwell-st., Felling, to erect shop premises at Leam-la. estate (Stage 4).

Gateshead.—T. Mitchison, Ltd., shipbuilders, Gateshead, are considering laying down of additional building berths to allow construction of larger ships.

Huddersfield. — Leeds Regional Hospital Board plans new hospital, £2¼ million est. Regional A: P. B. Nash (A), Park-parade, Harrogate.

Liverpool.—EC seeks loans £11,150 for additional classrooms at Croxteth sec. sch. for boys and £10,400 for additional laboratory and adaptations at Ellergreen sec. commercial sch.

Manchester.—TC approved revised plans of extension to canteen and erection of exhibition galleries over at Park Works, Ten Acres-la. and Grimshaw-la., Newton Heath, for Mather & Platt, Ltd. A: Cruickshank & Seward (F), 196, Deansgate, Manchester, 3.—TC approved erection of new sec. sch. at Wilton Polygon, Crumpsall, for Governors of Jews' School. A: Taylor & Young (F). 195, Oxford-rd., Manchester.—TC approved erection of two-storey factory on site of 13-27, Elsworth-st. and 7-9, Chatley-st.., Cheetham, for P. & H. Bailey, Ltd. A: Peter Cummings (F), Jaceyhse., Oxford-st., Manchester, 1.

Manchester.—EC proposes College of Further Education in Withington/Didsbury area. Approved alterations to school at corner of Barlow Moor-rd. and Mauldeth-rd. West, Chorlton Park.

Manchester.—EC proposes extensions to Plymouth-gr. sch. To include following in 1959 building programme:—Extensions to Regional College of Art; new building for St. John's College. Approved extensions and alterations at St. Anne's sch., Newton Heath; alterations and extensions at Southall-st. sec. sch. of Art, Lord-st., Strangeways; extensions at Cheetham Adult Education Centre, Orford-st., Cheetham; alterations and extensions to St. Margaret sch., Great Western-st., Moss Side; additional classrooms and lavatory accommodation at Ardwick county sec. sch. for girls, Devonshire-st., Ardwick.

TC proposes alterations and extensions at Sunderland-st. Depot. Approved plans for 18 single persons' dwellings and 16 aged persons' dwellings at Moor-rd., Northern Moor; 36 single persons' dwellings and 16 aged persons' dwellings at Tuffley-rd. and Firbank-rd., Newall Green; 10 aged persons' dwellings at Hilary-rd., Woodhouse Park; 18 single persons' dwellings at Verwood-walk and Whitehouse-dr., Newall Green; and two two-storey blocks of 18 aged persons' dwellings and tenancy office at Hall-la., Baguley.

Plans proposed:—Erection of warehouse and office building, after demolition of existing property, at 31-33, Church-st. for Church Street Property Co., Ltd. A: E. Levy (F), 32, Deansgate, Manchester; single-storey extension to factory and vehicle maintenance building at Stokes-st., Clayton, for Metal Box Co., Ltd. Plans by own Building Department, The Langham, Portland-pl., W1.—Coy Bros., 106, Wilmslow-rd., Manchester, 14, propose erection of 17 houses on site between Kent-rd. West and Rusholme-rd., Victoria Park, adjoining Antwerp-hse.

Middlesbrough.—Newcastle Regional Hospital Board has been asked to extend Parkside Maternity Home to provide another 20 beds. Board's Ch. A.

Middlesbrough.—Newcastle Regional Hospital Board proposes new Teesside centre for spastic children, £10,000 est. Board's Ch. A.

Newcastle-on-Tyne.—City C to build 72 flats and maisonettes at Kenton North estate. City A: George Kenyon, 18, Cloth Market, Newcastle.

Newcastle-on-Tyne.—Plans have been approved for factory, warehouse and offices at Blandford-st., for E. Massey, Ltd. A: S. J. Stephenson, Gillis & Ptnrs., Saville-chmbrs., North-st.—Plans have been approved for No. 2 prim. sch. at Kenton for City EC. A: Turley & Williamson (A/A), 46, Jesmond-rd.

Newcastle-on-Tyne.—Plans approved for science laboratory at Dame Allan's school, Fowberry-cres. A: Cackett, Burns Dick & Mackellar (F/A), 21, Ellison-pl., Newcastle.

Northumberland.—EC approved preliminary estimates £122,690 for new Coxlodge prim. sch. County A: C. C. Brown (A), County Hall, Newcastle-on-Tyne.

Nottingham.—TC approved plans for new depot at Glaisdale-dr. for T. Wall & Sons, Ltd. A: Starr, Hall & Clifford, 7, Wellington Circus, Nottingham.—New office block at 3-7, Middle Pavement for the Yorkshire Insurance Co., Ltd. A: Broadhead & Royle (F/A), 2, Castle-pl., Nottingham.

Redcar.—TC has approved plans for 10 aged people's homes and six houses. Boro' E.

Rotherham.—Walpamur Co., Ltd., Darwen, propose new warehouse, offices and showrooms at Wilfred-st. and Westgate-st. A: S. Elden Minns & Son (L/A), 454, Glossop-rd., Sheffield.

Sedgley.—UDC appointed A. Young (F), 4, Parsons-st., Dudley, as A for Stage 1 of proposed Cricket Meadow estate.—To negotiate with Gregory Housing, Ltd., for erection of flats at Dudley-rd. estate.

Settle.—RDC approved layout for 96 houses at Mill Close site.

South Shields.—Plans have been submitted to M of E for proposed new RC inter-parochial sec. sch. A: T. A. Page, Son & Hill (F/F), 75, King-st., South Shields.—EC approved preliminary plans for second stage of proposed additions to Cleadon Park county sec. sch., involving building of science and woodwork rooms. A: T. A. Page, Son & Hill (F/F).—EC approved plans by T. A. Page, Son & Hill (F/F), for additions to Redwell county sec. mixed sch., submitted to M of E for consideration.—R. Collins (A), AMTPI, St. Hilda-st., South Shields, is A for proposed factory for Falcon Murest Manufacturing Co., Ltd.—R.A.O.B. offered site at Laygate-st. for new club premises.

HEAD OFFICE:
4 CARLTON GARDENS,
LONDON, S.W.1.
Telephone: TRAfalgar 5600

Principal Branches and Stock Depots:

BELFAST	*Belfast*	58643
BIRMINGHAM, 1 ...	*Midland*	1042-3-4
BOOTLE, 20	*Liverpool, Bootle*	2121
BRIGHTON, 1	*Brighton*	23739
BRISTOL, 8	*Bristol*	33889
GLASGOW, C.2 ...	*Douglas*	3281-2
LEEDS, 11	*Leeds*	24377
MANCHESTER, 3 ...	*Blackfriars*	3800
NEWCASTLE-ON-TYNE, 1	*Newcastle-on-Tyne*	21919
SOUTHAMPTON ...	*Southampton*	23648

ESTABLISHED 1834

Spennymoor.—C. H. Errington (L), 46, Grainger-st., Newcastle-on-Tyne, is A for new Remploy factory.

Staffs.—EC proposes new gymnasium at Edensor sec. mod. sch., £27,000 est.

Stockport.—Governors of Greek-st. high sch. propose erection of new sch. at Offerton.

Stoke-on-Trent.—TC seeks loan £60,103 for erection of Berry Hill county prim. sch.

Sunderland.—T. H. Rae & Ptnrs., 5, Belford-terr., appointed QS by EC for proposed dining-room, scullieries, etc., at Mauds-la., for pupils attending St. Patrick's RC sch.—Subject to Ministry approval, EC intends including in next year's building programme scheme for hostel accommodation at Carlton-terr. for Technical College students.—Plans are being prepared by W. & T. R. Milburn (A/A), 18, Fawcett-st., for two temporary classrooms at St. Anthony's grammar sch.

Sutton Coldfield.—BC approved plans:—16 houses and one bungalow at Hillside-rd. for Ashworth & Seward, Ltd., Birmingham; five houses at Gibbons-rd. for Lonnis Properties (Birmingham), Ltd.; alterations at Royal Hotel, High-st. for Boswell Hotels, Ltd.; rebuilding of offices at 38, Mere Green-rd. for E. Gill; 71 houses and garages adjacent to West View-rd. for Davies & Son (Builders), Ltd., 87, Sheffield-rd., Birmingham, 23; new workshop, offices, etc., at Reddicap trading estate for Chambers of Sutton, Ltd.

Warmley.—RDC recommended to approve layout plans for 562 dwellings at new estate at Blackhorse-la., Mangotsfield, for Bristol overspill, £750,000 est. Site works £90,000 est.

Warrington.—RC Authorities propose erection of new sec. sch. at Orford. A: Forshaw, Massey & Greaves (A/A), 18, Museum-st., Warrington.

Warrington.—TC approved plans for 36 maisonettes in two four-storey blocks at Napier-st., Howley.

Whickham, Co. Durham.—A. Watson, builder, Front-st., has submitted scheme to planning authorities for erection of residential hotel between Broom-la. and Whagg-la.

Wolverhampton.—TC approved plans for multi-storeyed store at School-st. and Skinner-st. for James Beattie, Ltd.

TENDERS

* Denotes *accepted.*
† Denotes *provisionally accepted.*
‡ Denotes *recommended for acceptance.*
§ Denotes *accepted subject to modification.*
¶ Denotes *accepted by H.M. Government Departments.*

Barrow-in-Furness.—180 dwellings at North Walney estate for BC. *Direct labour. £265,669.

Berkeley, Glos.—Constructional steelwork for nuclear power station for AEI—John Thompson Nuclear Energy Co., Ltd. *Vickers Armstrongs (Ship Builders), Ltd.

Birmingham.—Erection of Wychall Farm nursery unit, King's Norton, for TC. *F. Deeley, Ltd., Harborne, £21,537.—Erection of Further Education Centre at Golden Hillock-rd. *Parsons & Morrin, Ltd., 33, Belgrave-rd., Birmingham, £29,497.

Blackburn.—16 one-bedroomed flats at junction of Wensley-st. and St. Mark's-rd. for TC. *Middleton & Co. (Blackpool), Ltd., £14,612.

Blackburn.—16 one-bedroom flats at junction Wensley-st./St. Marks-rd. for BC. *Middleton & Co. (Blackpool), Ltd., £14,612 (subject to MH&LG approval).

Bradford.—122 houses and 42 garages at Holme Wood housing estate for TC. *M. Harrison & Co., Ltd., Leeds.

Brighton.—Block of 57 flats between Sackville-rd. and Vallance-gdns., Hove. Managing agents: Parsons, Son & Basley. A: G. A. K. Isted (A), 6, Hove Park-gdns., Hove. *R. Green (Brighton), Ltd., £120,000.

Darlington.—32 houses at Aycliffe for RDC. *Bell & Ridley, Ltd., North-rd., Durham, £51,923.

Droitwich.—New junior sch. at Chawson estate for Worcs. CC. *C. C. Lampitt, Ltd., £52,371.

Edinburgh.—New buildings for Edinburgh University at Salsburgh Green, Dalkeith-rd. A: Rowand Anderson, Kininmonth & Paul (F/F), 16, Rutland-sq. QS: Reid & Gibson, FRICS, 2, Melville-st. *William Arnott & Macleod, Russell-rd., Westend, Edinburgh, £285,000.

Felling, Co. Durham.—New Leam-la. Roman-rd. county jun. and infants' sch. for

Durham CC. County A: G. R. Clayton (F), South-st., Durham. *M. S. Failes, Ltd., 199, Coatsworth-rd., Gateshead, £97,523.

Gateshead.—80 two-bedroomed houses at Ventnor-gdns. housing site for TC. Boro' E: G. F. Winters. *Dorran Construction, Ltd., Perth, £105,636.

Heanor.—100 houses and site works at Dunstead/Godkin site for UDC. H. Stirland & Sons, Ltd., Kimberley, £131,191.

Leeds.—New shop premises at George-st. for TC. *Direct labour.

Liverpool.—Phase II of Kirkby Park Brow county sch. for Lancs. CC. *R. Costain & Sons (Liverpool), Ltd., Barlows-la., Fazackerley, Liverpool, £71,999. — Extensions to premises at Long-la. for W. & R. Jacob and Co. (Liverpool), Ltd. *Bovis, Ltd., 1, Stanhope-gate, W1.—Extensions to Adelphi Hotel for British Transport Commission. *Wm. Moss & Sons, Ltd., Liverpool.—New stores building at Speke Hall-rd. for Thompson & Capper, Ltd. *Worthingtons (Contrs), Ltd., 81, Shaw-st., Liverpool, 5.

¶**London (Admiralty).**—Particulars of contracts over £1,000 in value:—*Kent:* Renewal of rail track, Concrete Piling Co., Ltd., 10, Westminster Palace-gdns., Artillery Row, SW1; construction of roads and paths, W. H. Bensted & Sons (Contrs), Ltd., Coombe Quarries, Maidstone, Kent. *Dunbartonshire:* Building work, A. & J. Main and Co., Ltd., Clydesdale Iron Works, Possilpark, Glasgow, N2; alterations and additions to timber jetty, Robert Downie, Ltd., 141, West George-st., Glasgow, C2; rehabilitation of steel buildings, Blackburn (Dumbarton), Ltd., Castle-rd., Dumbarton. *Devon:* Mastic Asphalte Flooring, Val de Travers Asphalte, Ltd., 229, High-st., Exeter. *Hants:* Building work, John Hunt, Ltd., Cleveland-rd., Gosport, Hants. *Renfrewshire:* Alterations, etc., to huts, Peter McConnell, Ltd., 9, Underwood-rd., Paisley, Renfrewshire.

¶**London (Air Ministry).**—New works contracts to value £500 or over for week ended January 18:—*Civil engineering:* Stornaway, Isle of Lewis, William Tawse, Ltd., Angusfield, Aberdeen. *Wall tiling:* Greenham Common, Berks, Goodall, Barnard & Clayton, Ltd., Queens-rd., Basingstoke. *Building work:* Stafford, G. & J. Seddon, Ltd., Coronation-bldgs., Little Hulton, Walkden, Manchester; Burtonwood, Lancs, J. Gerrards & Sons, Ltd., Bendlebury-rd., Swinton, Manchester. *Artificers work:* Titchfield, Hants, Frank R. Freeman, Ltd., 13-14, Chapel-st., NW1; Bawtry, Yorks, C. Moyser & Son, Martin Bank-chbrs., 21, Baxter-gate, Doncaster.

London (British Railways).—Alterations and additions to Enfield Town station (Eastern Region). Region A: H. H. Powell (F) under general direction of A. K. Terris, BSc(E), MICE, Chief Civil Engr. *Kind & Co. (Builders), 564, High-rd., Leytonstone, E11.

London CC.—Major repairs, redecoration and minor improvements at Rushey Green county prim. sch. and annexe at Catford sec. sch. for boys, Lewisham. *George Green (Beckenham), Ltd., £13,121.

London CC.—Construction on Osier-st. site, Stepney, of eight flats and 24 maisonettes in two four-storey blocks, together with 31 tenants' stores:—

Charles S. Foster & Sons, Ltd., Loughton, Essex	£89,115
The Demolition & Construction Co., Ltd., Westminster	£88,400
Rowley Bros., Ltd., Tottenham	£85,302
Stewart & Partners, Ltd., St. Marylebone	£85,104
W. J. Simms, Sons & Cooke, Ltd., Westminster	£85,099
F. R. Hipperson & Son, Ltd., Dagenham, Essex	£84,876
William J. Jerram, Ltd., East Ham	£84,725
A. T. Rowley (London), Ltd., Tottenham	£83,654
Thomas & Edge, Ltd., Woolwich	£82,527
*Tersons, Ltd., Finchley	£80,792

Architect's comparable estimate is £83,675.

London CC.—Construction at Lawson estate, Southwark, of 57 flats in a block partly five and partly six storeys in height, together with 28 tenants' stores. A: Sir John Burnet, Tait & Ptnrs. (F/F), 12, Bloomsbury-sq., WC1:—

Walter Lawrence & Son, Ltd., Finsbury	£169,192
R. Mansell, Ltd., Croydon	£167,382
Holland & Hannen and Cubitts, Ltd., Westminster	£166,212
Allen Fairhead & Sons, Ltd., Enfield, Middlesex	£163,988
Richard Costain, Ltd., Lambeth	£163,147
Y. J. Lovell & Son, Ltd., Paddington	£162,958
Stewart & Ptnrs., Ltd., St. Marylebone	£162,135
Wilson Lovatt & Sons, Ltd., Westminster	£161,356
The Demolition & Construction Co., Ltd., Westminster	£160,956
Spiers, Ltd., Westminster	£160,876
Thomas & Edge, Ltd., Woolwich	£157,874
*William Willett, Ltd., Westminster	£157,808

Architect's comparable estimate is £160,220.

London CC.—Six flats in two-storey block, 44 maisonettes in eight-storey block, 21 two-storey houses, 18 tenants' stores, eight garages and play space at Mumford-rd., Lambeth:—

Sir Lindsay Parkinson & Co., Ltd., Westminster	£213,901
The Bunting Construction Co., Ltd., Lambeth	£213,018
M. J. Gleeson (Contractors), Ltd., Cheam, Surrey	£206,929
Kirk & Kirk, Ltd., Wandsworth	£202,892
Rowley Bros., Ltd., Tottenham	£201,385
The Unit Construction Co., Ltd., Feltham, Middlesex	£199,308
Tersons, Ltd., Finchley	£196,900
*W. J. Simms, Sons & Cooke, Ltd., Westminster	£194,259

Architect's comparable estimate is £193,933.

London CC.—Five-storey block of 40 flats, with 20 tenants' stores, at Elmington estate, Camberwell. *Direct labour. £97,787.

London CC.—Construction on Cope-st. site, Bermondsey, of 10 maisonettes in four-storey block, with five tenants' stores:—

T. Ringham & Co., Ltd., Wimbledon	£33,511
J. & J. Dean, Ltd., Leyton	£32,066
J. & R. Rooff, Ltd., West Ham	£31,443
Styles (Contractors), Ltd., Tonbridge, Kent	£31,217
Oliver R. Crondace, Ltd., Caterham, Surrey	£31,030
Wm. J. Jerram, Ltd., East Ham	£30,548
*Kirk & Kirk, Ltd., Wandsworth	£30,262

Architect's comparable estimate is £29,654.

London CC.—Construction on Bassant-rd. site, Woolwich, of 80 flats in four five-storey blocks, 44 flats in two blocks partly five and partly six storeys in height and 15 houses in three two-storey blocks, together with 56 tenants' stores, 16 garages and three playgrounds (contract A); and 31 flats in three three-storey blocks and 43 houses in four two-storey blocks, together with 15 tenants' stores, four garages, one shop, estate workshop and playground (contract B). Rates and prices in bills of quantities for contract A will be used to value cost of work in contract B:—

Prestige & Co., Ltd., Westminster	£323,155
A. T. Rowley (London), Ltd., Tottenham	£320,279
W. J. Simms, Sons & Cooke, Ltd., Westminster	£318,741
Tersons, Ltd., Finchley	£317,474
Rowley Bros., Ltd., Tottenham	£311,213
S. G. & A. Agombar, Beckenham	£310,916
Kirk & Kirk, Ltd., Wandsworth	£310,755
Thomas & Edge, Ltd., Woolwich	£306,167
Gee, Walker & Slater, Ltd., Westminster	£305,942
*M. J. Gleeson (Contractors), Ltd., Cheam, Surrey	£305,051

Architect's comparable estimate is £313,332. On basis of prices in accepted tender, est. cost of work in contract B is £213,100.

London CC.—Construction on Antill-rd. site, Stepney, of 50 flats in one nine-storey block and 20 maisonettes in two four-storey blocks, together with 36 tenants' stores, three garages and a toddlers' play space:—

W. J. Cearns, Ltd., West Ham	£198,987
Stewart & Ptnrs., Ltd., St. Marylebone	£196,598
A. T. Rowley (London), Ltd., Tottenham	£196,242
R. J. Rowley, Ltd., Tottenham	£194,980
Thomas & Edge, Ltd., Woolwich	£194,463
Rowley Bros., Ltd., Tottenham	£188,793
Tersons, Ltd., Finchley	£186,993
*J. M. Hill & Sons, Ltd., Wembley, Middlesex	£185,188

Architect's comparable estimate is £178,592.

London CC.—Construction on the Leatherdale-st. site, Stepney, of 50 flats in two five-storey blocks, together with 15 tenants' stores:—

J. Gerrard & Sons, Ltd., Manchester	£129,385
Kirk & Kirk, Ltd., Wandsworth	£121,679
H. C. Horswill, Ltd., West Ham	£121,596
M. J. Gleeson (Contractors), Ltd., Cheam, Surrey	£117,948
W. J. Simms, Sons & Cooke, Ltd., Westminster	£117,586
Stewart & Ptnrs., Ltd., St. Marylebone	£116,775
A. T. Rowley (London), Ltd., Tottenham	£116,542
Rowley Bros.. Ltd., Tottenham	£115,774
*Tersons, Ltd., Finchley	£109,860

Architect's comparable estimate is £114,475.

London CC.—Flats and small home for aged at Eastway, Hackney:—

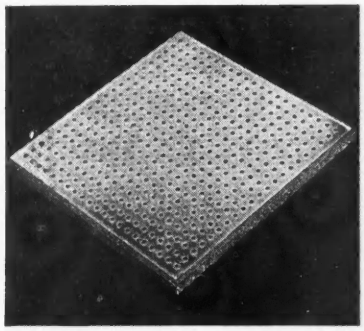
S. B. Budge & Co., West Ham	£155,655
A. T. Rowley (London), Ltd., Tottenham	£135,946
W. J. Cearns, Ltd., Poplar	£135,326
Sloggetts (Contractors), Ltd., Kensington	£134,188
J. M. Hill & Sons, Ltd., Wembley	£132,567
W. J. Simms, Sons & Cooke, Ltd., Westminster	£132,537
C. Miskin & Sons, Ltd., St. Albans	£131,672
A. E. Symes, Ltd., West Ham	£128,324
*Tersons, Ltd., Finchley	£125,702

(Subject to approval of M of H.)

Architect's comparable estimate is £128,957.

¶**London (MoW).**—Contracts placed for week-ending January 11:—

Essex: Wickford, erection of sub-post office, S. Cronin & Sons, Ltd., Britannia-rd., Warley, Brentwood, Essex. *Gloucestershire*: Post Office, Bedford-hse., Westbury-on-Trym, erection of new temporary sorting office. Stone & Co. (Bristol), Ltd., 140, Redland-rd., Bristol, 6. *Lancashire*: Bridge-st., Manchester, erection of new Crown building. J. Gerrard & Sons, Ltd., Swinton, Manchester. *Lanarkshire*: Hecla-ave., Drumchapel, Glasgow, erection of branch post office and sorting office, J. Crawford & Sons, Ltd., 14, Woodside-terr., Glasgow, C3. *Surrey*: 49, The Green, Kew, occupational services, W. & M. Negus, Ltd., Station Works, King James-st., Southwark, SE1. *Sussex*: Crawley, erection of telephone exchange and telephone repeater station, J. Longley & Co., Ltd., Crawley, Sussex. *Yorkshire*: Home Office Store, Dalton, adaptations to hutted accommodation



UNITONE
(REGD. TRADE MARK)
ACOUSTILES
UNITON LIMITED
Acoustic and Insulation Division
25 Coptic St., New Oxford St., London, W.C.1
LANgham 5736 and MUSeum 7460
Sole Distributors for Scotland:
CHARLES TENNANT & CO. LTD.,
22 Blythswood Square, Glasgow, C.2
Tel.: Central 2291/5
Sole Distributors for Northern Ireland:
CHARLES TENNANT & CO. (N. IRELAND) LTD.
P.O. Box 72, 94 Royal Avenue, Belfast
Tel.: 26256 (5 lines) Belfast

and sewage scheme, M. Westwick & Co., Kirkgate, Thirsk, Yorks; St. Andrews Dock, Hull, erection of waterguard offices, J. Mather & Son, Ltd., Leads-rd., Stoneferry, Hull.

London, W1.—Rebuilding of store at 376-384, Oxford-st. for C & A Modes, Ltd. A: North & Ptnrs (F/L), 40, The Broadway, Maidenhead. QS: Veale & Sanders, 19, Hanover-sq., W1. *Rush & Tompkins, Ltd., 109, Station-rd., Sidcup, Kent. £750,000 approx.

¶**London (War Dept.).**—Works contracts placed for week ended January 11:—*Essex:* Building, T. J. Evers, Ltd., Colchester. *Hampshire:* Painting and decorating, Arnold Sharrocks, Ltd., Aldershot. *Kent:* Painting and decorating, T. H. Kenyon & Sons, Ltd., London. *Lancashire:* Building, Arthur McColl & Son (Builders), Ltd., St. Helens. *Middlesex:* Roofing, Woodcock Bros. (Wimbledon), Ltd., Wimbledon. *Stirlingshire:* Paint shop equipment, Batchelor & Buckling, Stirling. *Suffolk:* Steel groynes, W. & C. French, Ltd., Colchester.

Newcastle-on-Tyne.—New workshops and garages at General Hospital for blood transfusion vehicles, for Newcastle Hospital Board. Board's Chief A. *John Jackson & Sons, Corporation-st., Newcastle, £11,081.

Newcastle-on-Tyne.—Block of offices for Prudential Assurance Co., Ltd. *Leslie & Co., Darlington.

Newcastle-under-Lyme.—New houses at Seabridge-la. for BC. 19, *Red Roofs Building & Concrete Co., Ltd., £28,564; 72, *Tideswell Bros., Ltd., Basford, Stoke-on-Trent, £114,398; 25, *G. A. Poole, Ltd., Liverpool-rd., Newcastle, £39,436.

New Windsor.—Six houses at Stuart-way, Dedworth, and 58 dwellings at Clewer New Town for BC. Boro' E. *E. J. G. Morgan, Ltd., Industrial Estate, Uxbridge, Middx. £11,007 and £78,253.

Peterlee.—61 dwellings at Acre Rigg for DC. A: W. J. Scott, Dip.Arch. (F). QS: G. J. Antcliff, ARICS. Bell & Ridley, Ltd., £109,581; J. Twiname, Ltd., £107,669; A. V. Clerey & Sons, Ltd., £104,713; G. M. Pearson & Son, Ltd., £98,368; *Lane Fox & Co., Ltd., High Barnes Works, Sunderland, Co. Durham, £98,096.

Plymouth.—New Barne Barton sec. mod. sch. for City C. A: Vyvyan Board & Ptnrs. (A), Plymouth, in conjunction with City A. QS: W. T. Hills & Co., Plymouth, in conjunction with City A. *A. N. Coles (Contrs.), Ltd., Sutton-rd., Plymouth, £104,990.

Pwllheli.—Extensions to grammar sch. for Caerns CC. *H. Williams & Sons (Builders), Ltd., Bangor, £69,472.

Ringwood and Fordingbridge.—14 three-bedroom houses, 4 two-bedroom flats and 8 one-bedroom flats at Troublefield Copse, Hurn, for RDC. Frank Andrews, LRIBA, 58, Southampton-rd., Ringwood, Hants., architect. *New Forest Construction Co., Ltd., Christchurch-rd., New Milton; roads and footpaths at same site, * Limmer & Trinidad Lake Asphalt Co., Ltd., Mount Pleasant Gravel Pits, Lymington.

Ripon.—Ripon Cathedral infants' sch. for West Riding CC. *Walter G. Birch (Harrogate), Ltd., Harrogate.

Rothwell.—Stage II of sec. sch. for West Riding CC. *W. G. Birch (Harrogate), Ltd., Cold Bath-rd., Harrogate, £240,000 approx.

Sutton Coldfield.—18 houses at Clarence-rd. Blackberry-la. site for BC. *Davis & Son (Builders), Ltd., 87, Sheffield-rd., Birmingham, £26,300.

Walthamstow.—17 bungalows and 13 flats on site of Priory Court for BC. *Seivad, Ltd., £57,833 (subject to MH&LG approval).

Wednesfield.—11 shops, 11 maisonettes and eight flats, Ashmore Park housing estate. E&S: Thomas A. Peacock, MIMunE, 29, Bolton-rd. QS: Henry Vale & Sons, Wolverhampton. *Lewis Bros. (Wednesfield), Ltd., Blackhalve-la., Wednesfield, £54,502 (subject to Ministry approval).

West Hartlepool.—32 bungalows at Owton Manor estate for TC. Boro' A: A. G. Sinclair (A). *Taylor & Evans, Ltd., Elwick-rd., West Hartlepool.

Wrexham.—New Memorial Hall at Bodhyfryd for committee. *E. W. Gittins & Sons, Ltd., Johnstown, Wrexham.

FEDERATION OF MASTER BUILDERS

UNITE FOR STRENGTH

FEDERATION OF MASTER BUILDERS

THE LARGEST INDIVIDUALLY REPRESENTATIVE ORGANISATION IN THE KINGDOM

ENROL NOW

SUBSCRIPTION £6.6.0 p.a.

Service to members includes free monthly issues of the FEDERATION JOURNAL

London Region—37 Areas
And over 100 Provincial Branches

THE FEDERATION OF MASTER BUILDERS
26 GT. ORMOND STREET, HOLBORN, W.C.1
Tel.: CHAncery 7583

Please send particulars of the advantages of membership to:

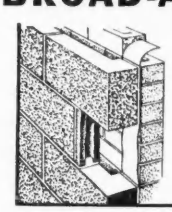
.....

.....

KINDLY CUT ALONG DOTTED LINES

25/1/57

BROAD-ACHESON REVEAL BLOCKS



Complete the Job of Cavity Construction

BROAD & CO. LTD.
PADDINGTON, W.2

WOOD BLOCK FLOORS

STEVENS & ADAMS LTD.

Victoria Works,
Point Pleasant, Wandsworth, S.W.18

THE ESSEX STEEL SCAFFOLDING Co LTD

9a HIGH BEECH ROAD
LOUGHTON · ESSEX

for BUILDING DECORATING MAINTENANCE and REPAIRS

'phone Waterloo 5474

Consult

W. & M. NEGUS LTD.
Station Works,
KING JAMES STREET, S.E.1.
and DOYLE ROAD,
SOUTH NORWOOD, S.E.25.
(Addiscombe 3427)

NEGUS of SOUTHWARK

GALBRAITH
BROTHERS LIMITED

BUILDERS
CONTRACTORS
& ENGINEERS

Registered Office:
61 BARTHOLOMEW CLOSE
E.C.1
MONarch 7597-8

Works:
CRAYFORD BRIDGE
KENT
Bexleyheath 5651-4